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ASH'S

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CANADIAN QUARTERLY

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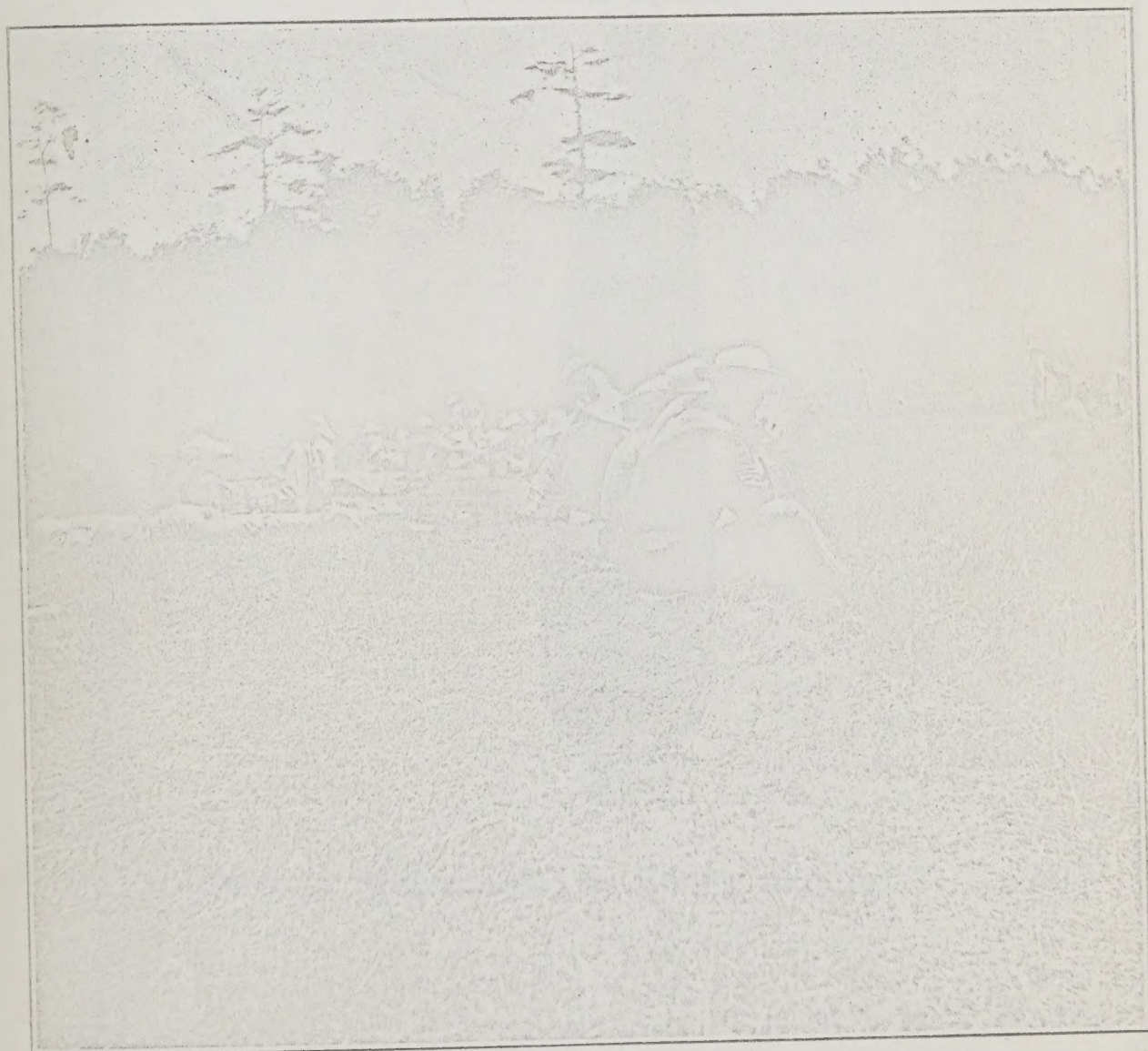
CLAUDIUS ASH, SONS & CO. LIMITED.

CANADIAN BRANCH,

11-13 GRENVILLE ST. TORONTO, CANADA.

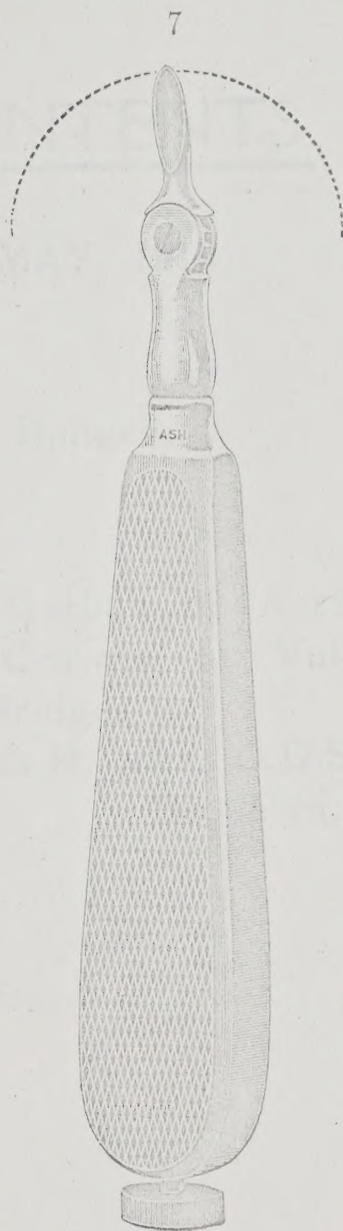
MAIN DEPOT

LONDON, W. ENGLAND.



Root Elevators

Fig. 7 is two-thirds natural size.)



Elevator, Adjustable, in Ebony handle - \$2.25

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MAY, 1916

COVER DESIGN—

Chataque Rifle Ranges

ORIGINAL MATTER—

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Detachable Crowns in Vulcanite
Plates and Bridges

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Kingsley's
Vulcanite Finishers



The illustrations show the full size of each blade ; Fig. 1 shows the full length of each handle ; and the outline on the side of Fig. 6 shows the curve of the blade.

In Polished Steel, with Wooden Handles
(Figs. 1 to 6) each 35 cents

Ash's Canadian Quarterly Circular

VOL. VI.

TORONTO, MAY 1, 1916

No. 1

AN IMPROVED METHOD OF ANCHORING DETACHABLE CROWNS IN VULCANITE PLATES AND BRIDGES¹

By FREDERICK H. NIES, D.D.S., BROOKLYN, N. Y.

I invite you to consider earnestly this afternoon a method which I have devised for fastening crowns in vulcanite plates and bridges. The detachable crown is a modification of the English tube tooth exhibited by C. Ash & Son at Boston in 1842, at a meeting of the Boston Surgical and Dental Society. All modern detachable crowns are modifications of this same tooth. Through the courtesy of that company's manager, Mr. Sykes, I am able to show you this original set which some of you may have seen before. In this form the detachable crown was, and still is, used to-day in swaged metal plates of gold and silver. That it might have been used in vulcanite work is also possible although I have been unable in a limited search to find any record of such use. This tooth, known to us in its modified form as a detachable crown, was first placed on the market in sets of fourteen for full dentures by this same firm.

A plate made up of these full bulbous teeth, so like our own, has always a more natural feeling to the tongue than obtains where the vulcanite is carried down to the biting edge on the palatal and lingual surfaces (Fig. 1). As a matter of fact with the old style plates we have been building up an artificial gum on the interior that does not correspond to the natural gum, which by reaching to the cutting edge, destroys the translucency of the porcelain, making it dull and opaque in appearance and far from natural, interfering frequently with incisive articulation and appearing at times distinctly visible in laughing. The full bulbous crown set has none of these shortcomings. The fact that the rubber of the plate is carried only to the basal or gum neck of the tooth instead of down to the biting edge or pin guard means a smaller, lighter plate, more room in the mouth for the tongue

¹ Read at fifty-first annual convention, Connecticut State Dental Association, Hartford, Conn., April 20-22, 1915.



Fig. 1. (a) Full bulbous crown set made up with anchor bar and posts with (b) a cross-pin set made for the same case

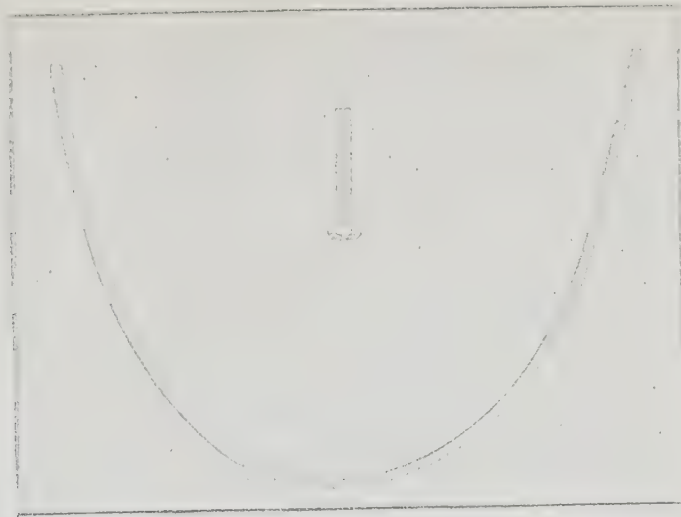


Fig. 2. Anchor bar and perforated post

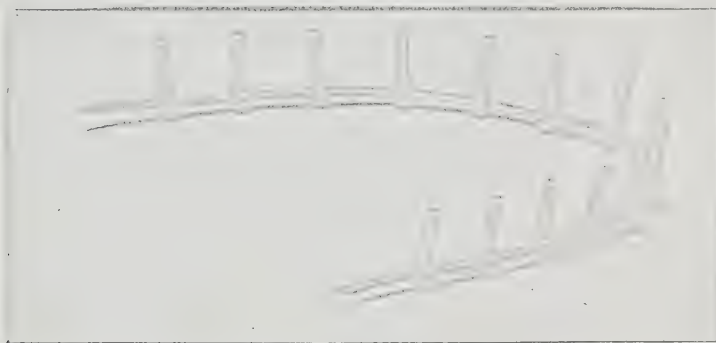


Fig. 3. Posts in position on anchor bar



Fig. 4. Tooth with post in place

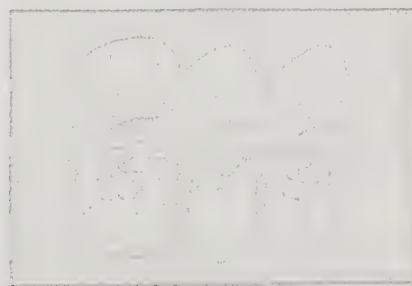


Fig. 16. Anchor bar and posts used with porcelain crowns in bridge work before soldering

and a natural tooth surface for the tongue to press against in articulation, a better surface for separating food, open cleansing spaces, less visible rubber and greater translucency, the teeth lending themselves to irregular arrangement and presenting a more natural appearance.

Answering an inquiry on the subject of full bulbous crowns for dentures, Dr. J. Leon Williams wrote me:

"In answer to yours of yesterday let me say I entirely agree with you as to the beauty and strength of full crowns for denture work. I have said many times during the past few years that in my judgment the denture tooth of the future will be a solid, full form porcelain crown. I am at present engaged in designing something in this line but it will probably be a year or more before they are on the market. I will keep you in mind for some advance forms."

Some years ago I began to use this type of tooth in my practice, but soon found that while the teeth and plate were all I hoped, the teeth needed stronger pins than those furnished, for wherever there was any undue stress the teeth came off, much to my embarrassment, for I had hoped to give my patients the benefit of this improved set. It was at once apparent that in this type of tooth, fastened only at its gum base end, there was greater leverage than had been anticipated by the manufacturers. This type of tooth was attached in two ways, in one a single platinum post was baked in the tooth, as in the S. S. White Counter-sunk tooth; in the other way the tooth was recessed for a post or pin, as are all detachable crowns, and with this crown was furnished an aluminum composition pin with a large head. This pin was set in the crown after the case was flaked and the wax boiled out. The failure of some of the counter-sunk teeth to hold in previous years should have convinced me that these teeth would not stand any undue pressure without breaking out. But the aluminum pin seemed so generously proportioned that I felt that if it did not disintegrate (which it has since done), because made of aluminum, it would take a good deal of stress to pull it out.

Many sets made up of these pins were returned, however, with the teeth off, generally in those cases where a close bite had

left little space for rubber between the model and the base of the tooth. Investigation showed many of the pins intact but pulled bodily out of the plate carrying the vulcanite between the head of the pin and the base of the tooth with it.

Plainly this was a problem that could be met only by providing a much stronger connection between the teeth and the plate without modifying or destroying the useful character of the teeth, yet furnishing additional resistance at the anchorage to the strain exerted on the tooth. To accomplish this end I distributed the strain of each tooth upon the plate, over a much wider area than is possible with the ordinary pins now employed, and the construction is such that the strain on a particular tooth is, to a large extent, distributed over the entire plate.

This was obtained by constructing an anchor bar in the form of a horse-shoe of half round metallic wire on which all the pins were strung and which was itself embedded in the plate parallel to the teeth and ridge.

My first effort (after the teeth were flaked and the wax removed) consisted in burnishing 24 karat gold plate to the base of the crowns, horse-shoe shape. Through this plate I drove 14 gauge gold wire into each crown cutting it off as each post was fitted and waxing it to the pure gold strip, which was removed, invested and soldered. This was a long and tiresome process, so I dropped it only to see it duplicated and published a year later.

My next experiment was to fit 14 gauge wire into each tooth and then bend a gold wire to fit and touch each tooth post, waxing each post to the wire and soldering together at one time. This method also took much time and needed considerable skill to make it accurate. So while meditating over the subject John Carretto, my assistant who co-operated with me in this work, suggested that I bend and hammer a loop at the end of each pin to encircle the wire. This was a good idea and I had a number of sets made up that way. This method also consumed much time and needed much skill to hammer and solder the fourteen loops uniformly. Later I conceived the idea of a perforated pin of a sheet metal stamping, making the pin and loop with a set of dies instead of by hand, thus making them all uniform and

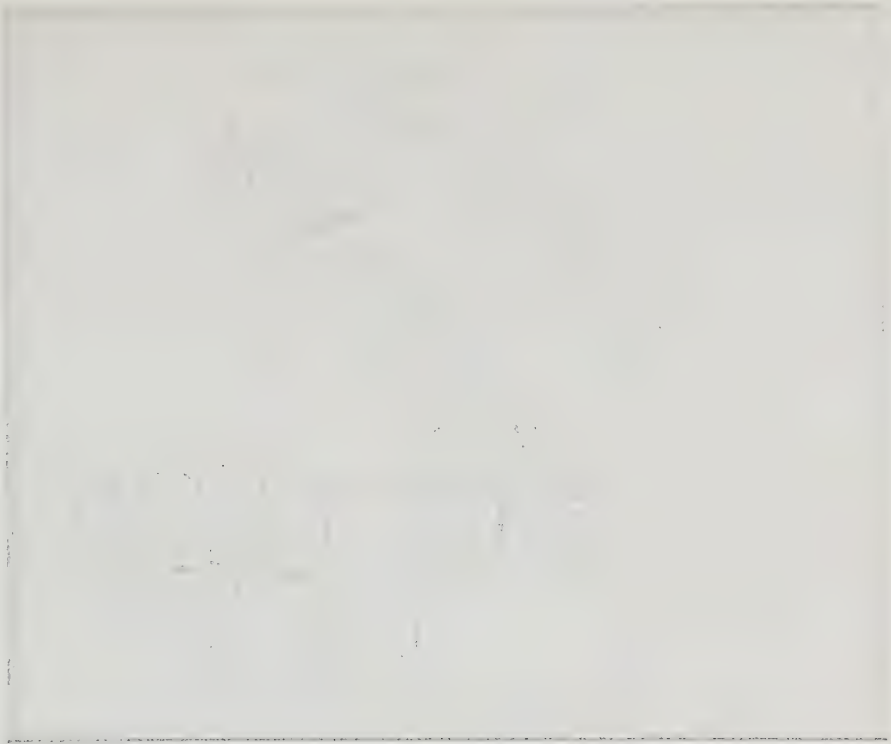


Fig. 5. View of upper and lower set of crowns secured with anchor bar and posts

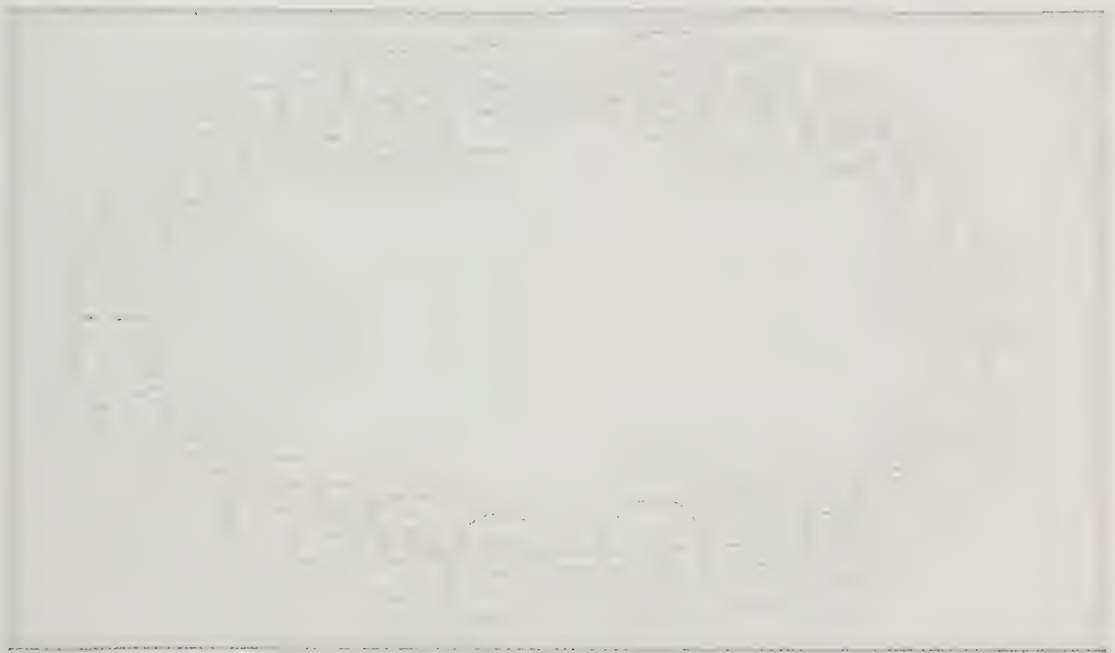


Fig. 6. View of set of crowns fastened with anchor bar and posts
Teeth strung on single bar to illustrate upper and lower

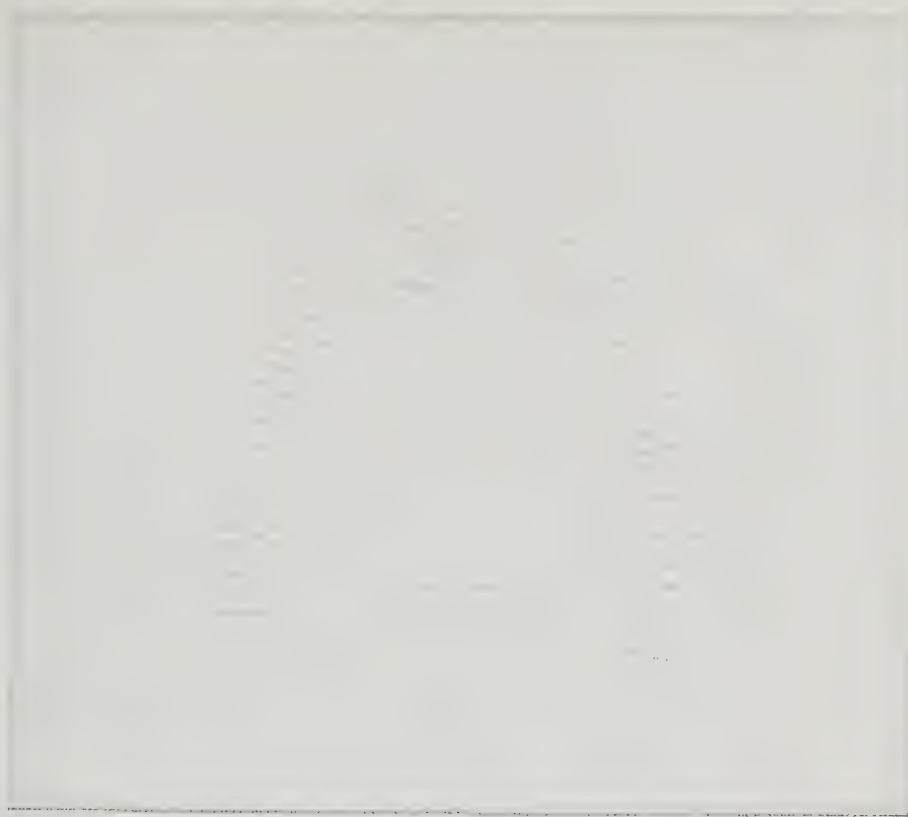


Fig. 7. Upper case invested, with wax removed, ready for anchor bar



Fig. 8. Upper flaked case with posts now on anchor bar ready for packing

(Fig. 16). Repairs will need no vulcanizing. The porcelain will break or shell off before the pins lose their grip or break, or the anchorage yields. If suitable crowns are at hand a plate can be repaired in fifteen minutes or just long enough to grind the new crowns in position and cement with oxyphosphate.

This feature of easy repair without vulcanizing is of inestimable value and profit to us, as well as to our patients in saving the embarrassment of appearing without teeth. The embedded anchor bar also furnishes additional reinforcement for the rubber base and makes that exceedingly strong.

The relative pressure exerted by artificial teeth on a plate denture, we are told by Prof. Gysi, is only one-tenth of that which natural teeth in good condition are capable of exerting. When a pivot tooth of the Davis or Logan variety is mounted on a healthy, natural tooth it would seem to us that this pivot should bear the same stress as a healthy, natural tooth. That it does not is proved by testing numerous inferior teeth, the porcelain of which broke and shelled off the pin at an average pressure of forty-eight pounds. This is the average strength that the porcelain in crowns will stand. Prof. Black showed that natural teeth in good condition are capable of bearing a pressure of from 150 to 250 pounds. The relative strength of the ordinary cross-pin or flat back vulcanite tooth compared with dowel crowns of the Logan, Davis, or Ash variety with pins projecting from their gum base in a longitudinal direction is shown by these tests. If it were not for the soft gum cushion beneath the ordinary rubber plate these cross-pin teeth would break at every bite. To prove this we have but to wedge a single tooth, on a partial denture, fixedly between two natural teeth in a manner that subjects it to the same stress that the approximating teeth stand. To our sorrow we all know how quickly it will break. This is not so of the pivot tooth with its gum base pin. For years we have seen this tooth stand up and do service among natural teeth without breaking, and when breaks do occur, it is largely because the roots have not been properly prepared.

It seems strange that this relative strength between cross-pin teeth and longitudinal pin teeth—although known to most of us—should not have been utilized and found its way into

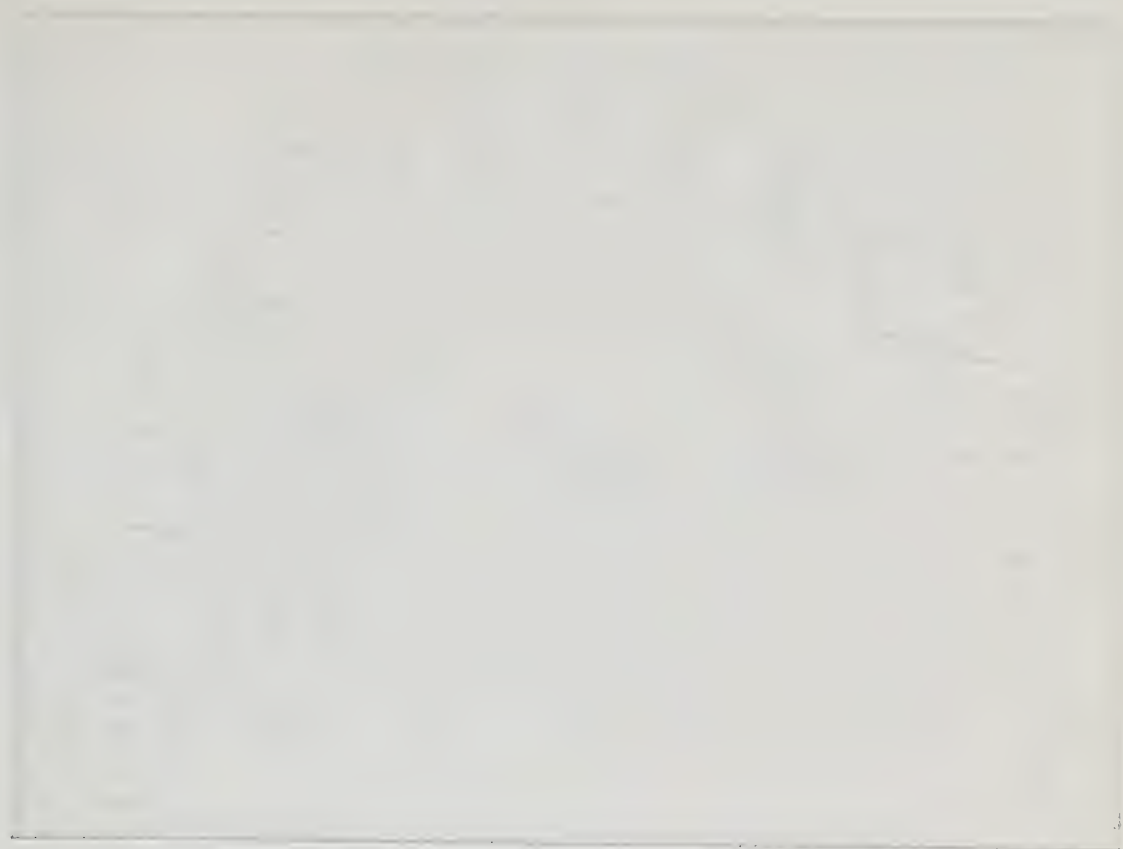


Fig. 9. Palatal view of finished plate, showing posts and pockets ready for cementing teeth

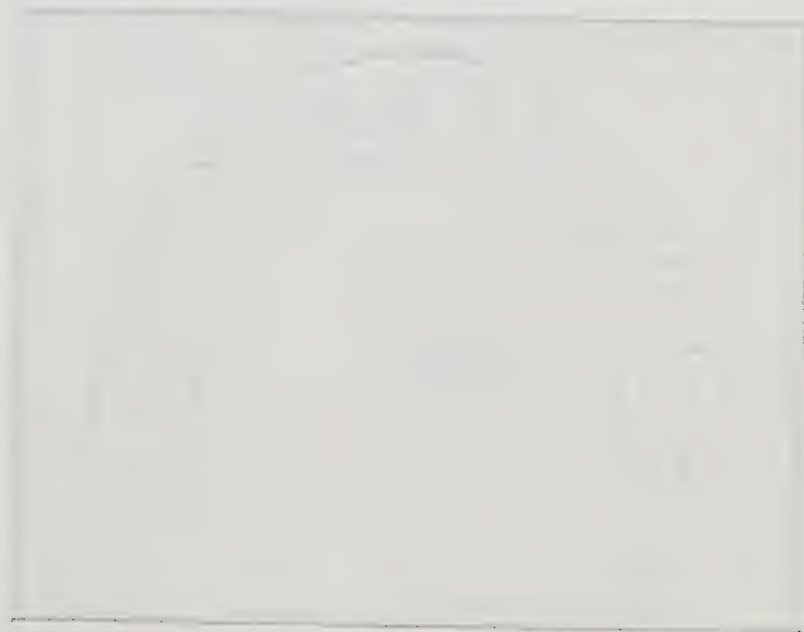


Fig. 10. Teeth cemented in place on the finished plate



Fig. 13. Set made of crowns with incisors ground to fit against the gum

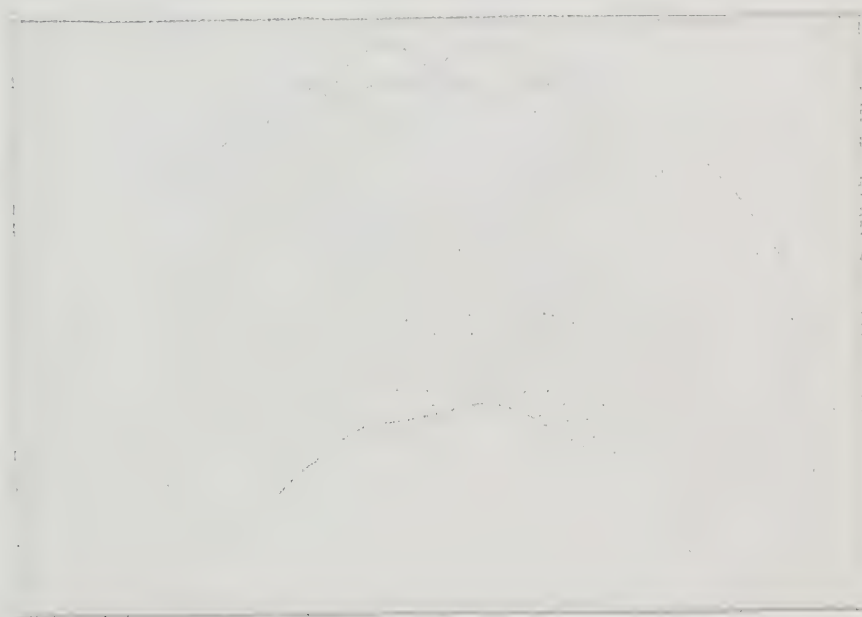


Fig. 14. Back view of Fig. 13

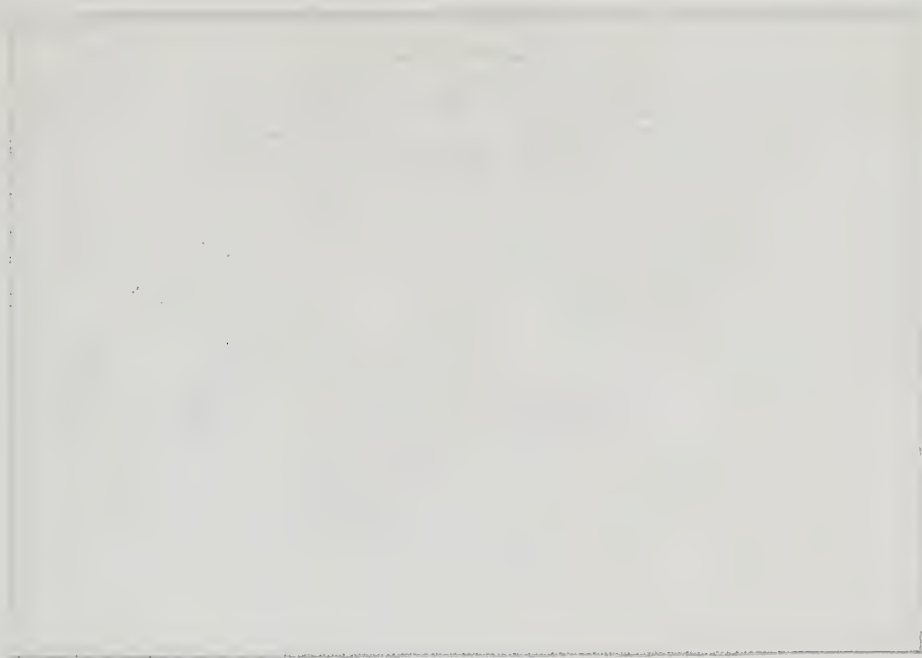


Fig. 15. Palatal view of Fig. 13

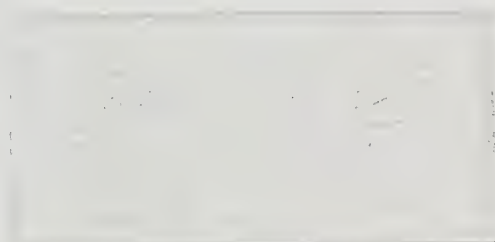


Fig. 19. Same model (Fig. 18) with porcelain added



Fig. 23. Finished porcelain bridge

rubber work, although we have seen it for years in English plate work. That efforts were made in this direction is seen in the counter-sunk tooth of the S. S. White Dental Mfg. Co., and a few others that appear in dental magazines. In all of these efforts the pin has been baked in the tooth; the result of this is that the depth of embedment is always problematical, the resistance uncertain and the pin constantly in the way when grinding is necessary. It also is impossible to butt this type of tooth directly against the gum when the fullness of the gum makes a gum block or pink rubber gum impossible.

Wishing to know accurately the amount of strain and stress to which teeth anchored in this way could be subjected and how they compared with other teeth and fastenings, I set about to test in as scientific and thorough a manner as possible the strength of the various types. Securing a Kohlbusch machine, the kind met with at dental exhibits and used by manufacturers of teeth, I began to use it on various makes of cross-pin, straight pin, and flat back teeth. This machine I found useful only for measuring the grip of pins under a straight pull. This would correspond to the extracting of an upper incisor tooth and does not at all reproduce the conditions that exist in the mouth. It seemed to me that the transverse test was the proper one for incisors. It can be likened to the breaking of a nail. Most repair plates show these teeth broken across at the pins. For bicuspid and molars a rubbing compression test comparable to an inverted pestle and mortar seemed proper. I had reached the conclusion that our tests were not what we desired because they simply measured the grip of pins under a straight pull which is not the strain that obtains in the mouth. It was therefore necessary to go over this subject carefully and secure instruments of precision if any were obtainable, and if not to devise a method for applying and measuring the comparatively low stresses to be encountered. It was necessary to devise them.

As the knowledge of the comparative strength of the various teeth manufactured is of much importance to us, I consulted William D. Ennis, Professor of Mechanical Engineering at the Polytechnic Institute of Brooklyn, as a man of wide experience and favorably known in pressure testing. In the experiments

the attempt was made to duplicate approximately the nature of the stress arising in practice. Described from the standpoint of the patient, in an upper denture this is assumed to be an upward and outward pressure divergent from the horizontal line. The machine constructed to produce this condition was a wood frame on which was mounted an adjustable shelf for the plate, a screw for applying the stress and a spring balance for measuring the stress. This was a Chatillon improved spring balance to weigh sixty pounds by two ounces. Stresses were applied gradually in increments of about one-half pound. Plates were set in matrices of plaster of Paris, stresses were applied except as otherwise stated over the whole back of the tooth, the distribution being affected by a rubber interceptor. This rubber interceptor gives a better distribution of the applied load than is the case where concentrated force is used, as might be applied by a point of metal. The leverage of the force applied, of course, varied somewhat with the area of the back of the tooth. The angle of divergence from the horizontal was kept between 15 and 20 degrees.

I gave Prof. Ennis six vulcanite plates to test, five having five teeth and one three teeth. The teeth tested were those made by six of the most prominent manufacturers, and his results were as follows:

Model VI.—Teeth, with composition posts in ordinary use. Stresses at break:

- L. Central, 41 pounds (a tooth of very large area).
- Lateral, 29 pounds.
- Cuspid, 26 pounds.

Average of three only, 32 pounds.

Model V.—Plain rubber platinum pin teeth in ordinary use, cross pin; High plate backing. Stresses at break:

- R. Central, 13 pounds.
- L. Central, 16 pounds.
- Lateral, 13 pounds.
- Cuspid, 16 pounds.
- Bicuspid, 28 pounds.

Average of all, 17 pounds.



Fig. 21. Machine invented for a new method of testing teeth for transverse breaking stress

Model IV.—Crowns fastened with aluminum-alloyed pins. Stresses at break:

- R. Central, 35 pounds.
- L. Central, 26 pounds.
- Lateral, 39 pounds.
- Cuspid, 36 pounds.
- Bicuspid, 61 pounds. Loosened, did not break.
- Average of above values, 39 pounds.

Model III.—Post teeth, with platinum posts. Paked in the basal surface. Stresses at break:

- R. Central, 23 pounds.
- L. Central, 27 pounds.
- Lateral, 20 pounds.
- Cuspid, 34 pounds.
- Bicuspid, 32 pounds.
- Average stress at failure, 27 pounds.

Model II.—Teeth fastened with anchor bar. Posts nickel, gauge 14. Bar nickel, gauge 15, half round. Detachable crowns. Stresses at break:

- R. Central, 26 pounds. An accidentally poor tooth, the post coming too close to the back, so that it broke through.
- L. Central, 44 pounds.
- Lateral, 44 pounds. Yielded gradually (loosened), but did not break.
- Cuspid, 41 pounds. Broke below top of post.
- Bicuspid, 62 pounds. Loosened, but did not break.
- Average of all, 43 pounds, excluding first 48 pounds.

Plate uninjured. Three teeth broke, two loosened in plate, the posts and anchor bar apparently holding after the tooth itself was broken.

Model I.—Detachable crowns fastened to embedded gold anchor bar. Gold posts, gauge 14. Bar of clasp metal wire, gauge 15, half round. Maximum stresses were as follows:

- R. Central, 45 pounds. Concentrated stress, no rubber interceptor.
- L. Central, 46 pounds. With interceptor without failure; then broke at 42 pounds (face scaled) under concentrated stress.
- Lateral, 42 pounds. Broke off just below top of post.
- Cuspid, 51 pounds. Broke below top of post.
- Average stress at failure, 49 pounds.

Bicuspid, 62 pounds. Without breaking. Afterward scaled off front at 42 pounds without interceptor.

Plate undamaged. In every case the tooth broke without injuring posts, plate or anchor bar. The mounting is stronger than the tooth itself, although the teeth are among the strongest

tested. For further progress a stancher material must be found for the teeth themselves.

The figures believed best to represent the average stresses at failure are as follows:

Model III.—Teeth with platinum pins baked in basal surface (for rubber work), 27 pounds.

Model VI.—Teeth with composition posts (for rubber work), 32 pounds.

Model V.—Teeth with platinum cross pins (for rubber work), 17 pounds.

Model IV.—Detachable crowns fastened with composition posts (for rubber work), 39 pounds.

Model II.—Detachable crowns fastened with gold anchor bar and posts (for rubber work), 48 pounds.

Model I.—Detachable crowns with nickel anchor bar and posts, 49 pounds.

Thus the anchor bar with posts is 50 per cent. stronger than its nearest cross-pin competitor, Model VI.

This method of securing crown teeth will make possible a renaissance of the continuous gum set. When made in this way they are not half their former weight and repair of broken crowns is possible without rebaking the entire piece. I regret that the only set of this kind that I have made was a practical one and I could not separate it from the owner for this meeting.

This attachment is also applicable to bridge work of many kinds permitting the making of all porcelain bridges and affording a great saving of solder on each tooth. I have with me a few specimens. This method has possibilities and in your hands may find new fields of usefulness as yet undeveloped.

Dental Forceps

THE illustrations of Forceps in the following pages represent some of the most improved forms in general use, which have met with the approval of the best Operators. The upper part of each is drawn nearly full size, in order to give a clear view of the construction of the beaks. To facilitate reference, the Forceps are placed in numerical order according to the numbers by which they are known. It should be noted that the words "for the right or left side of the mouth," employed in some of the descriptions, means the right or left side in the patient's mouth.

We have devoted special attention to this branch of our business for more than half a century, during which time we have availed ourselves of the suggestions for new Forceps and for modifications of existing forms made by the most eminent practitioners in the Dental Profession, including the late Sir John Tomes and other Operators whose names have never been formally associated with the instruments which they designed. All our Forceps are made of the best steel, nickel-plated, and we can confidently recommend them for lightness, strength, temper, finish, and accuracy of adaption. The beaks of each are made to fit the teeth for which they are intended so perfectly that a firm grip can be obtained and sufficient pressure applied for the removal of any tooth without danger of crushing the crown.

We carry in stock, of our own manufacture, the principal American pattern Forceps at \$2.50 each.

NOTES

During cold weather Forceps should be warmed by being placed in hot water before they are used. The best tempered steel is liable to snap during the winter months if this precaution is neglected.

All our Forceps are supplied to order in polished steel—not nickel-plated—with black handles at 25c. each less than advertised prices.

Forceps, nickel-plated, can be had with the checkered parts of the handles Blacked over the Nickel at 15c. each extra.

Special Forceps made to Operators' own patterns, and submitted in the rough state for approval before they are finished.

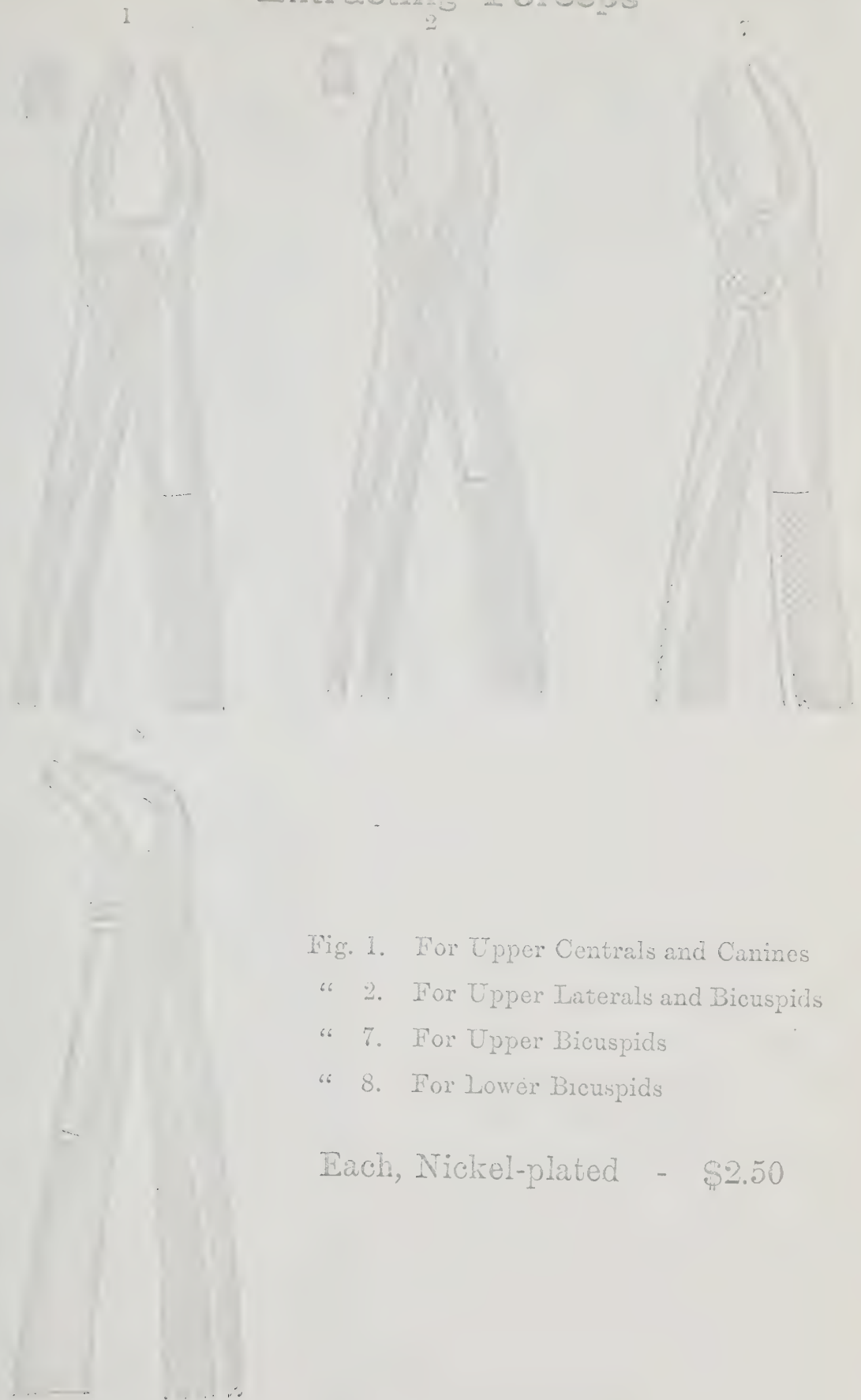
Forceps repaired, re-polished and replated at moderate charges.

All forms of American pattern Forceps kept in stock or made or obtained to order.

A Catalogue of our complete list of Forceps is yours for the asking.

Claudius Ash, Sons & Co., Limited

Extracting Forceps



- Fig. 1. For Upper Centrals and Canines
" 2. For Upper Laterals and Bicuspids
" 7. For Upper Bicuspids
" 8. For Lower Bicuspids

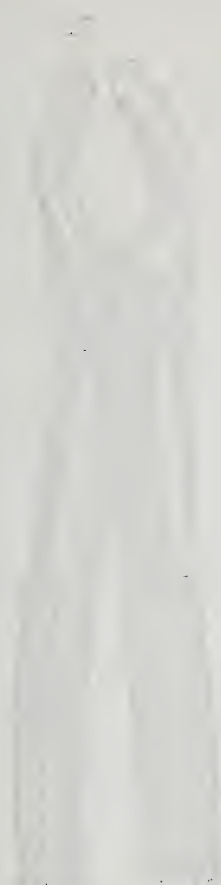
Each, Nickel-plated - \$2.50

Extracting Forceps

17

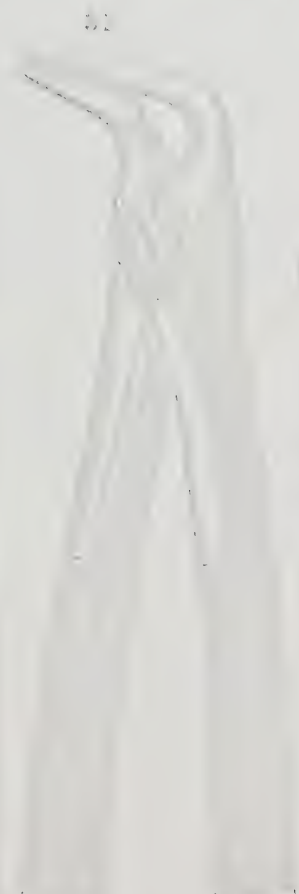
18

19



21

22



- Fig. 17. For Upper Right Molars
 " 18. For Upper Left Molars
 " 19. For Upper Wisdom Teeth
 " 20. For Lower Wisdom Teeth
 " 21. For Lower Molars
 " 22. For Lower Roots

Each - \$2.50

Extracting Forceps



Fig. 44 . For Upper Roots

" 44 *S* (not illustrated). Same shape as Fig. 44, but smaller in build and with narrower beaks.

" 45. For Lower Roots

Each, Nickel-plated - \$2.50

Extracting and Splitting Forceps



- Fig. 48. For Lower Roots
 " 51. For Upper Roots
 " 52. For Upper Roots.

Each - - - \$2.50

Excising Forceps

57

58

59



When preparing roots for pivoting, etc., it is not safe to use these excising Forceps until the portion of the tooth to be removed has been already partly cut through (see Fig. A). Neglect of this precaution may result in the root being splintered longitudinally.—See "Tomes' Dental Surgery," 3rd edition, page 756.

- Fig. 57. For excising Upper Teeth, broad, medium and narrow
" 58. For excising Upper Teeth, broad, medium and narrow
" 59. For excising Lower Teeth, broad, medium and narrow

Each, Nickel-plated - \$2.50

Extracting Forceps



Fig. 67. For Upper Wisdom Teeth

" 68. For Lower Roots

" 68A. For Lower Roots

Each - - - - \$2.50

Extracting Forceps



Fig. 76. For Upper Roots

" 76 S. For Upper Roots

" 79. For Lower Wisdom Teeth

Each - - - - \$2.50

Extracting Forceps
(Mr. E. Thorne's for Upper Teeth)



Mr. Thorne says: To those Operators who are accustomed to employ the short beak Forceps now so popular and so extensively used, these Forceps will be found of great advantage, inasmuch as they can, on occasion, with practice, be used for extracting the roots of most teeth in the maxilla. Their use, however, is especially indicated in the extraction of upper molar roots, the bend near the beaks enabling the Operator to avoid the teeth anterior to the root to be extracted, while the bend in the handles enables him to avoid the lower lip and to prevent bruising it.

At the same time no power is lost by the introduction of these bends, owing to the beaks being parallel with the handles. This admits of the greatest possible power being transmitted to the root and of the utmost penetration being obtained.

Each, Nickel-plated - \$3.00

Extracting Forceps

With Box Joints



(Hitherto known as Figs. 35 and 65, American pattern.)

Fig. 151. For Upper Roots, bayonet shape.

Fig. 152. Dr. Arrington's, bayonet shape, with very narrow beaks for extracting difficult Roots from the maxilla, also for extracting Roots of Front Teeth in the mandible.

In Polished Steel, Nickel-plated, Figs 151, 152
each, \$2.50

Lancets for Abscesses, etc.

Figs. 1 and 2. For opening abscesses, trimming
and smoothing filings, etc.

In Steel Handles, Nickel-plated,
Each - 40 cents

Other Lancets made or obtained to order.

REDUCING the PRICE of teeth
and
NOT CHEAPENING the product
is a
DIFFICULT PROBLEM to solve

¶ We are the first to satisfactorily solve this difficult problem and have placed before the Dental Profession, the well-known line of JUSTI TEETH with

"P.M." Placed in
Precious Metal PMS

—A pin that stands every test required of Platinum.

—A pin that is Insoluble in Nitric, Hydrochloric and Sulphuric Acids.

—A pin that is Higher in tensile strength than one made of Platinum.

—A pin that positively does not contain any base metal.

—A pin that will save you from 15 to 25 % on your tooth bills.

JUSTI "P.M." FACINGS, with medium short pins, will (at the present price) save you 25 % on Platinum pin facings.

JUSTI "P.M." Combination Sets will save you nearly 15 % on Platinum pin sets.

Your Dealer can supply you, and will, if you insist on getting "P.M." teeth.

H. D. JUSTI & SON

Philadelphia

Chicago

DEFEAT THE HIGH COST
—OF PLATINUM—

USE
METALITE
TEETH

Made of the famous
Consolidated Porcelain



Consolidated Dental Mfg. Co.
NEW YORK, N.Y.

SYNTHETIC PORCELAIN

ONE LIQUID AND A CHILLED SLAB

The setting time of a dental cement is largely affected by the temperature at which it is mixed. That temperature is determined chiefly by the temperature of the slab on which the powder and liquid are combined.

The temperature of a dental office may be 80 degrees in summer and 80 degrees in winter. Snowy landscapes do not indicate office temperatures.

A balanced cement requires balanced ingredients—known quantities. It means powders of uniform character, balanced with

ONE UNIFORM LIQUID

The liquid of Synthetic Porcelain is made in one setting only. That is necessary in order to maintain a balanced cement.

The best results are secured with a mixing temperature between 60 and 70 degrees, F. That means the temperature of the slab on which the mass is combined.

Place it under the cold water faucet or in a basin of cold water for a few minutes, wipe dry and proceed with the mix.

Instead of a variety of liquids to suit a variety of temperatures, control the conditions under which the mix is made.

Don't begin to finish Synthetic fillings under 10 to 15 minutes after insertion. To disturb any plastic filling before crystallization has materially advanced means an inferior result. This applies to any silicate cement.

Don't apply heat to a filling to accelerate the setting. Heat hastens the setting at the surface, while the bulk sets more slowly resulting in a weakened mass.

THE L. D. CAULK COMPANY

Laboratories: Milford, Delaware, U.S.A.

Canadian Branch—70 Bond Street, Toronto, Ont.

ENDURANCE

Is the test of every man's work.

When we build a thing, will it last? When we fix a thing, will it stay fixed?

When you set an inlay or a facing, its degree of permanency depends upon adaptation and that thin film of cement which holds it in place. That is the point of strength or of weakness, of success or failure.

Modern dentistry has developed a great variety of operations requiring cementation. They are pretty generally successful because cements have grown better. But there still are failures due to cements of inferior quality,

There have been more crowns and bridges, more facings and inlays set with

Caulk's Crown and Bridge and Gold Inlay Cement

than with any other material. They have endured. Thus we have contributed in no small way to the success of modern dentistry.

There are cements that are cheaper, cements for which exaggerated and ridiculous claims are made; but throughout both America and Europe, in a high percentage of all operations requiring a cementing agent, Caulk's Crown & Bridge & Gold Inlay Cement is used.

We have been making cements for 38 years and we have learned something every year. Economy and Efficiency suggest

Caulk's Utility Package - \$4.50

It contains four well-selected shades of zinc cement powder, sufficient liquid and a quantity of Copr-Zinc, to be added to the zinc cement when a copper cement is indicated.

THE L. D. CAULK COMPANY

Laboratories: Milford, Delaware, U.S.A.

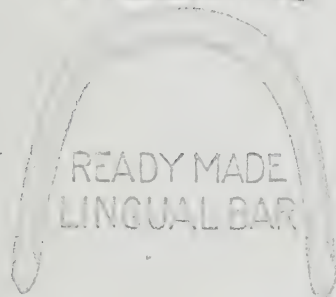
Canadian Branch—70 Bond Street, Toronto, Ont.

The most BEAUTIFUL and SUBSTANTIAL Cuspidor made.
With its superior patented features, has no equal anywhere at any price.
GUARANTEED to satisfy and please, or money refunded.

The Weber Dental Manufacturing Company CANTON, OHIO

The World's Largest Manufacturers of Fountain Cuspidors.

WILLIAMS



WILLIAMS READY MADE LINGUAL BARS are properly bent, contoured, and semi-adjusted, so that with very little manipulation they can be made to fit any case. Made with both plain and corrugated ends.

GOLD CASED BARS

MADE OF WILLIAMS OVAL LINGUAL BAR 18 k. and guaranteed for 10 years.

Guages (8x12—9x14—10x13) - - \$1.25 each

Made of WILLIAMS OVAL LINGUAL BAR 18 k. $\frac{1}{5}$ the thickness of the bar, and guaranteed for 20 years. Guage 9x14, \$1.50 each.

SOLID GOLD BARS

Made of WILLIAMS 18 k. gold, 10 per cent. platinum

Guage 9x14, \$4.00 each. Guage 10x13, \$3.50 each.

Made of WILLIAMS 16 k. gold, 2 per cent. platinum

Guage 10x13, \$2.00 each.

YOUR DEALER OR

THE WILLIAMS GOLD REFINING CO.

REFINED TO THE DENTAL TRADE

632 MAIN STREET

BUFFALO, N.Y.

GOLD and Your Laboratory

My Gold Work to the Dental Profession is NOT made to a PRICE.

The quality of the Gold I use is never lowered.

All Crowns made of 22 k, Gauge 29.

All Solder is 18 k. Fineness guaranteed.

I guarantee satisfaction and give you in the finished product, what your money entitles you to.

CHARLES L. DALY

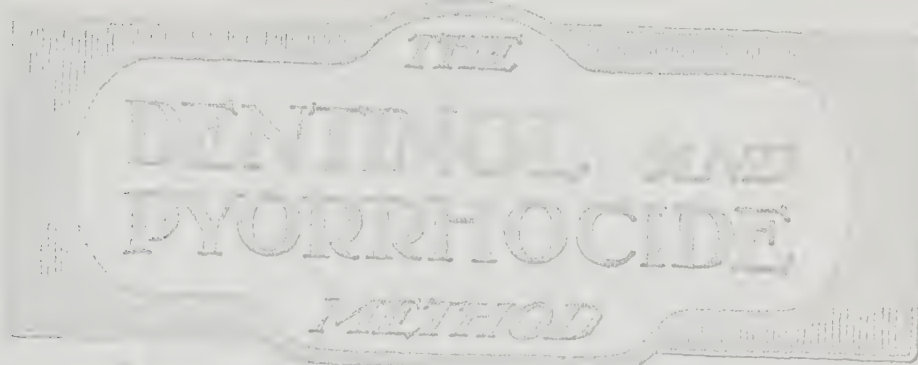
11-13 GLENVILLE STREET

Phone N. 5776

TORONTO

LOOK INTO

the matter with an open mind



The recognized standard Treatment for PYORRHEA will bear analysis—We invite

STUDY—SCRUTINY—INVESTIGATION

through the medium of The Pyorrhocide Clinic an easy and always available source of positive direct knowledge on the subject of PYORRHEA, ITS CAUSES, PREVENTION AND TREATMENT.

The therapeutic agents of the Dentinol and Pyorrhocide Method are :: ::

DENTINOL a liquid of powerful germicidal action applied full strength to gum tissues without injury—used when the patient is in the chair.

PYORRHOCIDE Powder (contains 3% Dentinol) an efficient prophylactic—Pyorrhocide cleans the teeth allays inflamed gum tissues—corrects SOFT BLEEDING SPONGY GUM conditions—used by the patient—a home treatment to promote mouth-health.

"PYORRHEA PICTURED" sent upon request.

The Dentinol & Pyorrhocide Co.

(Incorporated)

110-112 West 40th Street

New York

41

A LOW PRICED NERVE BROACH ...OF... GOOD QUALITY

In order to meet the demand of many of our customers for a low priced Broach to supplant the German article, we have put on the market

Ash's Popular Broaches
\$4.00 per Gross

These instruments are guaranteed and will give you satisfaction

Made in Extra Fine, Fine,
Medium and Assorted.

Claudius Ash, Sons & Co., Ltd.

CANADIAN QUARTERLY

ISSUED FROM TORONTO, MAY. AUG. NOV. FEB.

CLAUDIUS ASH, SONS & CO. LIMITED.

CANADIAN BRANCH,

11-13 GRENVILLE ST. TORONTO, CANADA.

MAIN DEPOT

LONDON, W. ENGLAND.

STUDENTS' EQUIPMENTS

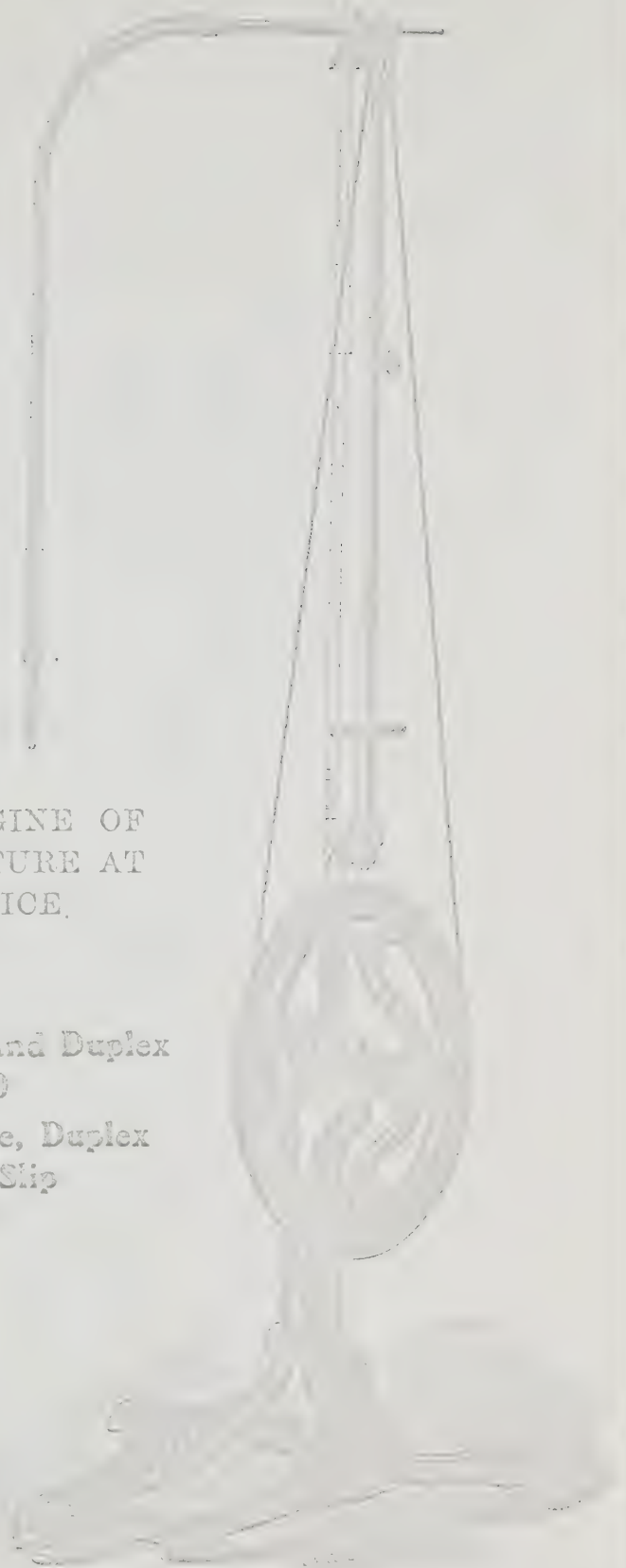
Ash's C Style Foot Engine

A GUARANTEED ENGINE OF
OUR OWN MANUFACTURE AT
A MODERATE PRICE.

With No. 7 Hand Piece and Duplex
Spring, \$31.00

With No. 7 Hand Piece, Duplex
Spring and No. 2 Slip
Join', \$36.00

Cash Discounts
allowed from above
Prices



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Ash's Canadian Quarterly Circular

VOL. VI.

TORONTO, SEPTEMBER 1, 1916

No. 2

A Word About Failures *

By FRANK R. WOODS, D.D.S.

*Instructor in Orthodontia, College of Dental Surgery,
University of Michigan, Ann Arbor.*

We all dislike to drag these skeletons from their closets, and so, perhaps, the greater need. Our successes are their own monuments and beautiful. When, however, the patient is disappointed in the joy of accomplishment; but if success be but qualified, or even substantially lacking, then is no time to assign unsatisfactory memories to forgetfulness, but rather, by careful analysis, to fix responsibility, though it may not always reflect unlimited credit upon the analyst.

We may give but short shrift to those cases which are doomed by the neglect or persistent indifference of the patient, or the lack of insistence upon proper care on the part of the parents, for they occasionally constitute circumstances beyond our control.

The greatest enemy of fully successful results is the lack of the highest ideals, or failure to adhere to them strictly, under trying conditions. It may seem so much easier to accept a compromise which seems to promise a pretty good result, but when we consider all the snares ever set to vex the orthodontist's soul, this is the most surely Satan's own. There is but one arrangement of the human denture that is truly efficient and in harmony with normal physical development of the head, and, for that matter, of the whole body, and that is the arrangement described by Dr. Angle as "Normal Occlusion." To be sure, there are cases of advanced development where the deviation from this ideal is of such a nature and of so great an extent that it is impossible, or, at least, impracticable, to restore and maintain the denture in pure normal occlusion; but if we resign our attempt only after the utmost patience has proved unavailing and every expedient insufficient, we shall certainly have accomplished a much nearer approach than if we begin by desiring a compromise, which, orthodontically, is but a qualified failure. For a given tooth in a given denture

* From *The International Journal of Orthodontia*

Hints and Items of Interest

Complications of Local Analgesia.—The complications of local analgesia may be divided into the major and minor ones. First be very careful never to use local analgesics of any kind for patients suffering from marked systemic or diastolic epilepsy; the cocaine group of drugs have, all of them, a stimulating effect upon the nervous system. Also never use these drugs in cases of exophthalmic goitre; here also the effects may be very serious. This disease can generally be recognized by its four cardinal symptoms—enlargement of the thyroid gland, exophthalmos, tachycardia, and muscular tremor. In patients who are suffering from some form of cardiac disease it has always been my belief that more danger arises from a painful operation than from the use of small quantities of novocain solution. For mitral cases it is wise to add to the solution described strychnine sulphate 1-30 gr.; this can be had in "tabloid" form, and kept in the case with one's syringe and drugs. For aortic cases, and for patients who from arterio-sclerosis, gout, or other cause have a high blood pressure, it is wise to use novocain tablets without adrenalin, and to keep some capsules of amyl nitrite ready for use if symptoms should occur. Of the minor complications, fainting is usually due to apprehension on the part of the patient, and may be prevented if one knows how to handle patients. If it occurs, smelling salts and a dose of spiritus ammoniæ aromaticus, 1 dram to a half-tumbler of water, is the best treatment. After-pain is most commonly due to the periosteum having been pierced and a local periostitis induced; it will seldom occur when the needle has been inserted with the precautions which have been described. Swelling is likely to occur where oily solutions of drugs are used, where the solution is too strong or too weak to be readily absorbed by the vessels, where sepsis has been introduced, or where air was injected owing to its not having been driven out of the syringe before the injection was made.—F. N. DOUBLEDAY in *British Journal of Dental Science*.

Porcelain Inlays—Many of those whose practice has been affected by the use of silicate cement explain that they use silicate only in small cavities, yet there can be no doubt that it has had, but probably only temporarily, an injurious effect upon the use of porcelain. No existing plastic material can seriously rival porcelain for any great length of time, in the large class of cases where it is indicated—for in its own sphere it seems destined to remain supreme.

Two classes may be depended upon to keep alive and extend the use of porcelain inlays:

First, those who have experienced its benefits, both patients and operators.

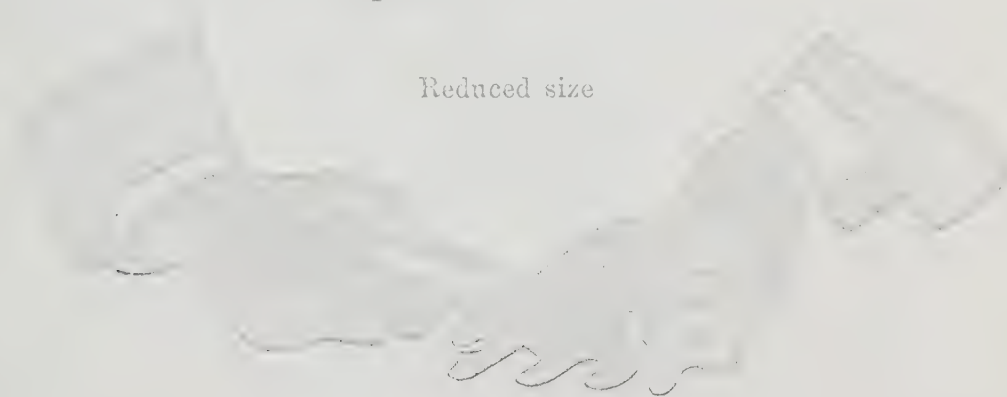
Universal Plate Shears (Specialty Model)

The most useful form of Shears on the market; an invaluable tool for the Dental Laboratory, with which the same work can be done as with the ordinary right or left, straight or curved, Plate Shears.



Just over half actual size

The blades of the Universal Shears are set at right angles to the handles and thus stand away from the work; only the cutting edges come in contact with it; the blades can therefore be freely turned in any desired direction without danger of bending or twisting, or tearing the metal; hence straight, curved or angular cuts can be made with equal ease.



Reduced size

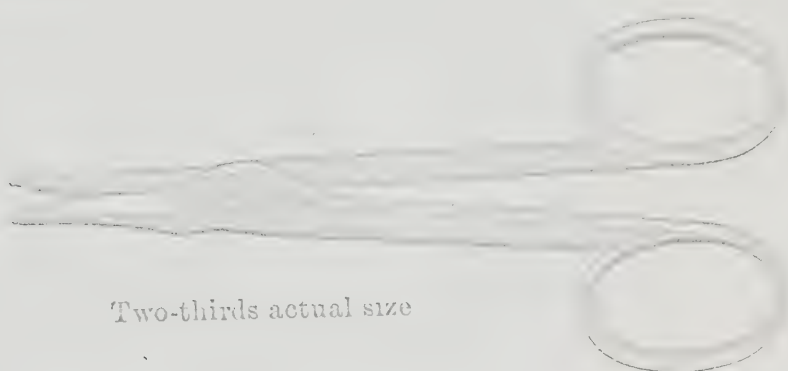
Some idea of the wide range of usefulness of the Universal Shears may be gathered from the accompanying reduced size illustration, which shows a number of variously shaped cuts in a plate and how the body of the blade exposed to view stands away from the metal.

Universal Plate Shears, Japanned Black
with Nickel-plated Blades\$1.75

Universal Crown Shears

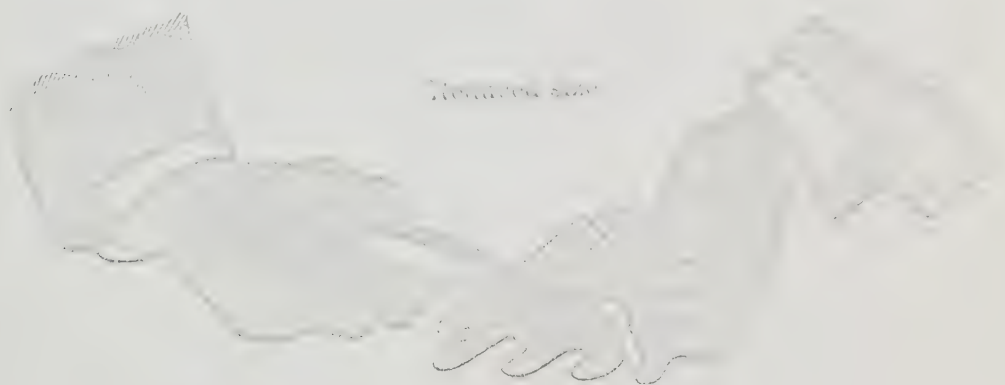
(Specially Tested.)

The most useful form of Scissors on the market; an invaluable tool for the Dental Laboratory, with which the same work can be done as with the ordinary right or left, straight or curved, Crown Scissors.



Two-thirds actual size

The blades of the Universal Scissors are set at right angles to the handles and thus stand away from the work; only the cutting edges come in contact with it; the blades can therefore be freely turned in any desired direction without danger of bending or twisting, or tearing the metal; hence straight, curved or angular cuts can be made with equal ease.



Some idea of the wide range of usefulness of the Universal Scissors may be gathered from the accompanying reduced size illustration, which shows a number of variously shaped cuts in a plate and how the body of the blade exposed to view stands away from the metal.

Universal Crown Scissors\$1.60

Mosley Crown Remover

An Ideal Appliance for Removing
Crowns from Roots

REGISTERED



NATURAL SIZE

The Mosley Crown Remover was the first instrument devised for removing Dowel Crowns from the mouth. Its primary object is to remove these crowns without in any way injuring the roots. This is accomplished quickly and painlessly. In most cases the crowns remain uninjured and can be used again if desirable.

A slight turn to the right of Thumb Screw E removes the Crown, one Wedge Tongue pulling the Crown downwards, the remaining two supporting the root.

- | | |
|--------------------|----------------|
| A. Wedge Tongues 3 | D. Thumb Screw |
| B. Vice Jaw | E. Thumb Screw |
| C. Thumb Screw | F. Jam Nut |

Complete directions with each Remover.

Price - - - \$5.50

Claudian Ash, Sons & Co., Limited

Trikresol-Formalin

Solution and Paste

(Dr. J. P. BUCKLEY'S Formula.)

Directions for Use

1.—In Teeth with Gangrenous Pulps, open up the cavity and clear out the canal or canals. Soak one or more cotton pellets in the Trikresol-Formalin Solution, insert in the canal or canals, and securely seal the cavity with Fletcher's Artificial Dentine to make it perfectly air-tight.

After one or two days remove the cotton pellets, wash out the canal or canals and cavity with a 3 per cent. solution of Carbolic Acid, and then thoroughly clean and dry out.

Now flow a drop of the Trikresol-Formalin Solution in the with Trikresol-Formalin Paste, and proceed with and complete the with Trifresol-Formalin Paste, and proceed with and complete the permanent filling.

2.—Trouble subsequent to Root Treatment. When inflammation with swelling and pain develops in teeth, the roots of which have been long previously treated, and trephining has to be resorted to, they should be left open under Trikresol-Formalin Dressings for a few days; the treatment described above, under No. 1, can then be completed in two sittings.

3.—Pulp Amputation and Nerve Extraction. In cases of pulp amputation and nerve extraction insert in the canal a cotton pellet soaked in Trikresol-Formalin Solution, seal air-tight with Fletcher's artificial Dentine, leave for a few days, then remove, flow a drop of Trikresol-Formalin Solution in the canal, fill it up with Trikresol-Formalin Paste, and insert the permanent filling upon it.

4.—Gangerous Pulp and Fistula. Should a gangerous pulp be accompanied with a fistula, Dr. Buckley opens the fistula, drains off the pus, inserts cotton pellets soaked in Trikresol-Formalin Solution and seals perfectly air-tight with Fletcher's Artificial Dentine. If necessary the treatment is repeated several times. The final stages of the work are carried out as described above under No. 1.

The most successful results are obtained when the above directions are faithfully followed.

Large package.....\$1.80 per box.

Rauhe's Improved Suction Disc for Vulcanite Dentures

PATENTED IN ENGLAND, GERMANY, FRANCE, AUSTRIA-HUNGARY,
BELGIUM, THE UNITED STATES, ETC.

Rauhe's Suction Disc has been specially designed to prevent injury to the palate. It does not draw down the tissues and produce soreness in the mouth. In this respect it is greatly superior to all existing Suction Discs.

There are no parts about it which can be lost or misplaced, such as bolts or screws, etc.



It is easily kept clean, owing to the fact that the rubber disc can be removed and replaced in a few seconds, without the use of a tool of any kind.

The anchorage of the rubber disc is so simple that the patient can renew the disc when necessary.

The suction power of the disc is sufficient to hold a denture quite firmly and securely in position.

It is unnecessary to add clasps to partial sets which are fitted with Rauhe's Suction Disc.

Directions for Use.

Press the disc on the most suitable part of the plaster of Paris model with the thumb, fasten it in position with the three small pins which are supplied with it, being careful to drive the head right home, and pack the hole in the centre with dental

rubber. After the case is packed and vulcanized, strip off the tin form in which the stud is embedded; the portion in which the pins are driven should be removed first. To facilitate removal, cut through the tin, open it with a pocket knife or suitable tool, and strip it off. Should the edge of the stud be bent in stripping off the tin form, it can readily be straightened with any blunt tool. When the stud is thus cleared of the tin form, slip a rubber disc over it and the Suction Disc is ready for use. To do this, the rubber disc should be held down with the thumb of the left hand and stretched over the stud with the thumb and forefinger of the right hand.

In regard to the position in which the Suction Disc should be set on the plaster of Paris model, it will be obvious that the flattest part of the palate should be chosen. Two Suction Discs should be used on exceptionally high palates and on V-shaped palates—one on each side. In the case of large palates it is desirable to set the Suction Disc as far back as possible.

Sometimes the full power of the Suction Disc is not immediately exercised when it is first put into the mouth, but after it has been worn for some time its action will be perfectly efficient.

SPECIAL.—To remove the collar from beneath the Stud, after the case is vulcanized, insert the point of an excavator in the slit exactly opposite the letter C in the name C. Rauhe and open it out gradually, without levering it up, so as not to injure the stud.

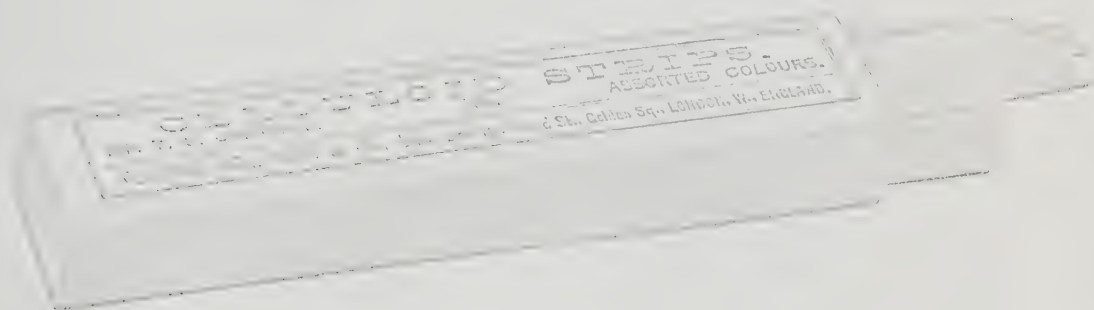
Prices.

Rauhe's Suction Discs for Vulcanite Work:

Gold Stud with 3 India-Rubber Discs.....	each	\$ 1.00
	per doz.	11.25
Aluminum-Alloy Stud with 3 India-Rubber Discs, each		.50
	per half doz.	2.50
Extra India-Rubber Discs, any size.....	per doz.	.30

Claudius Ash, Sons & Co., Limited
Sole Agents

Carter's Celluloid Strips



THESE are the first Celluloid Strips that were put on the market for DENTAL USE, and they are still the best although they sell at a lower price than others.

They are invaluable in Silicate Cement Work, and for Matrices.

Thin and Extra Thin

PER BOX - - - - 50 CENTS

Claudius Ash, Sons & Co., Limited

Ash's Oval Gold Cased Wire For Bar Lower



Bar Lower Dentures have come into universal demand. Note some of their advantages.

No tendency to push teeth outwards.

Greater cleanliness.

Less bulk.

Greater rigidity.

Per dwt. - - 40 Cents.

Claudio Ash, Sons & Co., Limited

Buxton's Gag



THIS Gag has long been the premier article of its kind. It is strong and durable. Will retain itself in the mouth and the handles are out of the way of the operator.

In addition to being a perfect Gag, it is most useful as a mouth opener, as the beaks are so constructed that one falls below the other and they can be forced in between the upper and lower teeth.

Price - - \$5.00

Claudio Ash, Sons & Co., Limited



Sanodent

A Superior Root Dressing

From the Formula of
MR. C. R. FITCH, L.D.S., Eng.

Sanodent has been regularly used and well tested for nearly four years with the most satisfactory results, hence it is offered to the profession as a

Thoroughly Reliable Preparation

Directions for Use

As a Dressing for Septic or Abscessed Teeth.—Thoroughly clean out the contents of the Pulp Chamber and Root Canals in the usual manner. Mix the Sanodent Powder and Liquid in the consistency of thick cream and apply on Cotton Wool to the Root Canals and Pulp Chamber. Repeat these dressings until the tooth is perfectly "sweet." Then permanently fill the Canals with either Asbestos Fibre, Gutta Percha Points, or Cotton-Wool covered with Sanodent mixed to a fairly thick paste.

In very septic teeth, which at the time of treatment are not abscessed, it is advisable at the first to clear out the contents of the Pulp Chamber only, apply a dressing of Sanodent, and leave the treatment of the Canals until a subsequent visit, when their contents will be far less septic.

Some Other Uses.—In those cases in which for some reason or other (e.g., Tortuous Canals), it is impossible to clear out the Canals thoroughly, cover the orifices of these Canals with Sanodent mixed to a paste, and carried to place on Asbestos Fibre or Cotton Wool. Any remaining Pulp will be preserved in an antiseptic condition.

As a "Mummifying" agent, those who practice "Mummification of the Pulp" will find Sanodent excellent. Subsequent to devitalising and removing the coronal portion of the Pulp, apply Sanodent, mixed to a paste, on either Asbestos Fibre or Cotton Wool.

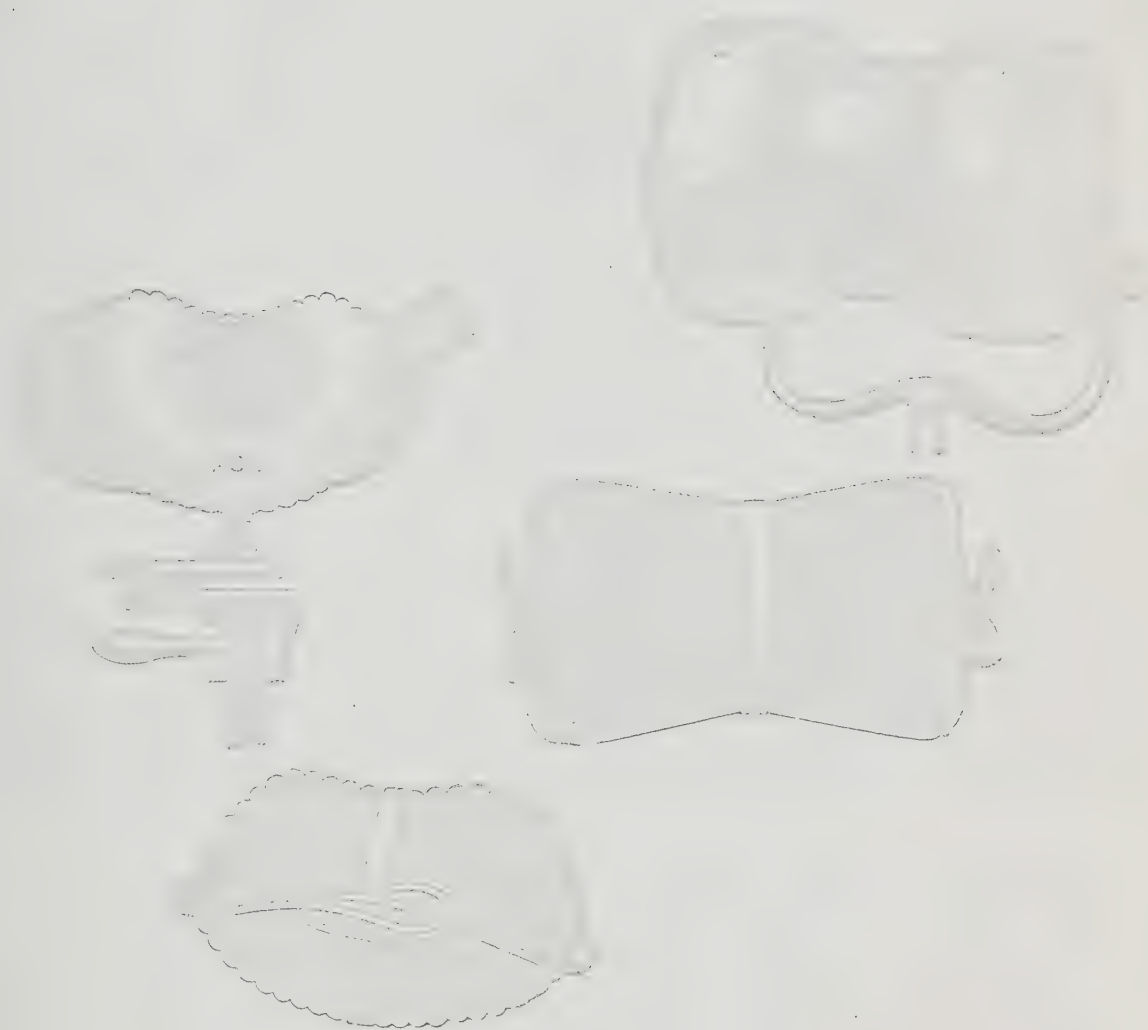
After the application of Arsenic, a dressing of Sanodent left on for a day, prior to attempting the removal of the Pulp, will render the pulp tough and thus admit of its being much more easily removed whole from the Canals.

Sanodent is very useful as a permanent Root-Canal Filling when it is mixed to a paste and used in conjunction with Asbestos, Gutta Percha Points, or Cotton-Wool.

N.B.—Do not force Sanodent through Apical Foramina, and do not seal it in contact with living tissue, either pulp or gum. Sanodent is not intended to replace proper Root Treatment, but to aid it.

Sanodent is supplied in stoppered bottles. The bottles should be kept well closed when they are not in use. After exposure to light and air the liquid becomes somewhat darker in color than as supplied, but this is no detriment to it, and in no way affects its efficacy.

Acme's Paper Head Rest Pads



These Pads have come into high favor, and are neat, cleanly, and inexpensive.

We carry them in stock for both Roll and Sectional Head Rests.

For Roll Head Rest - 70 cents

For Sectional Head Rest - 75 cents

Bottles for Nerve Instruments



THESE Bottles are labelled respectively Sterilizing Fluid and Alcohol. There is no better method of keeping Nerve Broaches, and they make a handsome adjunct to your cabinet. Your instruments are always kept in a sterile solution, and if Lysol is used your Broaches will never rust.

Set of two Bottles in Cardboard Case, 90 cents

Claude Ash, Sons & Co., Limited

The Genuine, Original Stents Composition

The Pioneer of all Impression Compositions
has now been before the Profession for

FIFTY-SEVEN YEARS

(It was introduced in 1857,

and still holds the premier position as

**::: THE BEST :::
IN THE WORLD**

for taking impressions of the mouth and
: : for many other useful purposes. : :

ATTTEMPTS have been made to imitate STENTS COMPOSITION; even the color of the box in which it is packed, and the color of the label on the box, have been copied, for the purpose of deceiving the unwary; hence it is necessary to say that every cake of genuine, original STENTS COMPOSITION bears the Trade Mark, which consists of the outline of two Impression Trays, and the name

STENTS

There is no other genuine, original STENTS COMPOSITION.

Stents Composition—*Continued*

TO BE OBTAINED OF
ALL DENTAL DEALERS

The label on every box bears this signature :

L. A. & C. D. Stent

BEWARE OF SPURIOUS IMITATIONS!

The genuine, original STENTS COMPOSITION is prepared in round cakes, pink or yellow in colour, and supplied in half-pound boxes.

Price per lb., \$1.20 ; 3-lb. lot, \$3.10 ; 6-lb. lot, \$5.85 ;
10-lb. lot, \$9.60

Stents Renovating Composition

This genuine, original STENTS RENOVATING COMPOSITION, which is expressly prepared for mixing with used, discoloured composition to make as good as new, is prepared in round pink cakes, and also supplied in half-pound boxes.

Price per lb., \$1.20

Sole Owners of the Original Recipe :

CLAUDIUS ASH, SONS & CO., Limited

5-12 Broad Street, Golden Square, London, W.

Canadian Branch—11-13 Grenville St., Toronto

Solbrig's No. 5 Press

(Patented).

For Casting of Gold and other Metals, Inlays, Crowns, Bridges, Backings, etc.



No. 2 Press and accessories consists of:—

Press,

2 Cylinders, Nos. 4 and 5,

2 Hollowing Cones,

1 box Asbestos Discs,

1 box containing—

12 Sprue Wires,

12 Rubber Bands,

12 Sticks Wax,

1 Bunsen Burner,

1 Support for Holding Cylinders over the Bunsen,

1 pair Cylinder Tweezers,

1 tin Coating Material,

1 Book of Directions.

Price with accessories, \$20.00

Save Your Hypodermic Needles

NOTHING aggravates the Dentist much more than to take up his Syringe after his last operation and find it *plugged*. He finds that he has laid it down after using it and it has quickly rusted, His time is too valuable to waste drying the needle out. All this annoyance is saved by the

Bardet Syringe Sterilizer



Keep your needle on your Syringe in the Sterilizer immersed in Lysol. Your needle will never rust, is kept in sterile solution, is always ready to hand and looks well on your table.

In neat Cardboard Boxes for Mailing,
70 cents Each

CLAUDIUS ASH, SONS & CO., Limited

Ash's Nerve Canal Pliers

Straight and Curved

For Removing Broken Drills from Root Canals

In preparing root canals for filling it sometimes happens that a drill is broken, and the question then arises how the piece left in the root can best be extracted.

The Points of these Pliers are fine enough to enter the root canal and to grasp the thin stem of the broken point that is lodged within it.

Price, Straight or Curved, \$1.35

Patrick's Contouring Pliers

Fig. 1

Fig. 2

Fig. 3

5 1/2 in. Long

5 1/2 in. Long

These Pliers are too well known to need an elaborate description. Pattern No. 2 finds the most favor. It should find a place in every laboratory.

Price, either pattern - \$2.00

Ash's Repair Facing Outfit

Designed by MR. H. J. CORIN, L.D.S., Eng.



Figs. 1 and 2, Twist Drills for Straight and Right Angle for drilling hole in backing.

Fig. 3, Countersinking Tool for removing burred edge and countersinking the hole.

Figs. 4 and 5, Screw Taps, large and small.

Fig. 6, Holder for carrying Gold Stud and screwing it into position.

Fig. 7, Holder for carrying small and large Screw Taps, Figs. 4 and 5.

Fig. 8, Screw Plate for the Dentist's use in making his own Gold Studs, should he desire to do so.

Fig. 9, Small, medium, and large Gold Studs.

DIRECTIONS FOR USE:

In the event of a tooth breaking off a bridge or a plate and bringing away with it one of the pins, leaving the other standing in the backing, cut off the standing pin, grind the backing flat with a small carborundum point, drill a hole in the centre of the backing, remove the burred edge formed by the drill, with the countersinking tool, tap the hole with the small tap (Fig. 5), follow on with the large tap (Fig. 4); again clear away the burred edge with the countersinking tool, fix the stud selected in holder (Fig. 6), and screw it into position right up to the shoulder. The case is now ready for the Repair Facing to be cemented on the stud.

To cement a Repair Facing on the Stud.—Select a Repair Facing of the same size as the broken-off tooth, remove all traces of wax from it, thoroughly cleanse it and the backing with chloroform or pure alcohol; mix C.A.S. Cement or Ash's Inlay and Crown Cement to a thin creamy consistency, smear the backing and the back of the Facing with it, also fill up the undercuts in the oval cavity of the Facing, press the Facing to place, hold it firmly in position for four or five minutes, then trim away excess of cement and coat the exposed edge with Ash's Varnish.

NOTES.

1. The method described above is applicable when both pins come away with the tooth.

2. Should both pins be left standing, in the space left by a broken-off tooth, a Repair Facing can be cemented on them.



Dr. Hunt's Self-Filling
Warm-Water Syringe

Original Form

Patented by
Dr. W. A. HUNT, of Yeovil, in 1870

THIS Original Form of Dr. Hunt's Self-Filling Warm-Water Syringe is known all over the world, and Dr. Hunt sets forth its advantages in these few words:—

“The syringe with the spring compressed, as shown in the illustration, is put into a tumbler of warm water; thus when the Operator wants to use it the barrel is full of warm water immediately ready to his hand.

“Those who treat teeth are fully alive to the need of water in their syringe which is comfortably warm.”

Syringe, nickel-plated, with screw-off
curved nozzle and leather
plunger - \$2.00

7½ inches

FOR ORTHODONTIA

The cement is most important. It must possess strength, tenacity and insolubility. A cement possessing these qualities *in combination* is rare.

Caulk's Crown and Bridge and Gold Inlay Cement

does possess each of these characteristics, We have labored for twelve years to develop the several important properties to the maximum, and to incorporate them in *one* cement.

*This cement possesses the maximum
strength, adhesion and
insolubility.*

1-shade package	-	-	-	\$1.50
4-shade (Utility Package)	-	-	-	4.50

The L. D. Caulk Company
Toronto - Philadelphia

Laboratories - - - Milford, Delaware, U.S.A.

Synthetic Services

THE superiority of Synthetic Porcelain has been so definitely established that further argument seems unnecessary.

We believe that most dentists whose practice requires esthetic restorations are permanent users of the material.

Therefore, our Clinical Department is now devoting much time to a demonstration of proper cavity preparation for Synthetic, the purpose being to illustrate those cavities where Synthetic is indicated, and to describe the best forms of preparation. *This department invites correspondence from all users of Synthetic.*

B-1. The proximity of basilar pit cavities to the pulp requires early attention. Because of its non-irritating, insulating character, Synthetic Porcelain is indicated. Simply prepared by opening the cavity with a pointed carborundum stone or fissure bur. In more cases cotton rolls can be used instead of dam.

B-2. The first evidence and usual form of cervical cavity. If extending under the free margin of gum, several days preliminary *over-filling* with gutta-percha deflects the gum tissues sufficiently to permit the rubber dam to be placed. The celluloid strip, one end of which has been rounded to the gingival curve, slightly coated with cocoa butter, may be used as an intermediary under tantalum packing instrument. *Do not burnish while filling is setting.*

B-3. Decay has extended both lingually and labially, though not so far as to involve the incisal edge. Note the broad square cavo-surface angle, here, as always when space allows, obtained from fine carborundum stones. Synthetic Porcelain here is used to greatest advantage, with ease of placement, best appearance and permanency. It is good practice to line all cavities with Caulk's Cavity Lining Paste before Synthetic, efficient lining.

DE TROY'S SYNTHETIC PORCELAIN

Trade "SYNTEX" Mark

The L. D. Caulk Company
Toronto - Philadelphia

Laboratories - - - Milford, Delaware, U.S.A.

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JUSTI P. M. TEETH?

(PRECIOUS METAL)

"Ob! You ARE using them. So am I---and saving money by doing it.

They are equal to Platinum Pin Teeth in every way---and are as good if not better than any kind of Teeth I ever used---not excepting the pure Platinum Pin Teeth which H. D. Justi & Son also make.

"I know when Justi & Son say that P.M. Teeth are as good as Platinum Pin Teeth, I am not taking a chance. Step in and see me, Good-bye."

...GOLD and... Your Laboratory

My Gold Work to the Dental Profession is NOT made to a PRICE.

The quality of the Gold I use is never lowered.

All Crowns made of 22 k, Gauge 29

All Solder is 18 k. Fineness guaranteed.

I guarantee satisfaction and give you in the finished product, what your money entitles you to.

CHARLES L. DALY

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Ash's Imperial Hypodermic Syringe



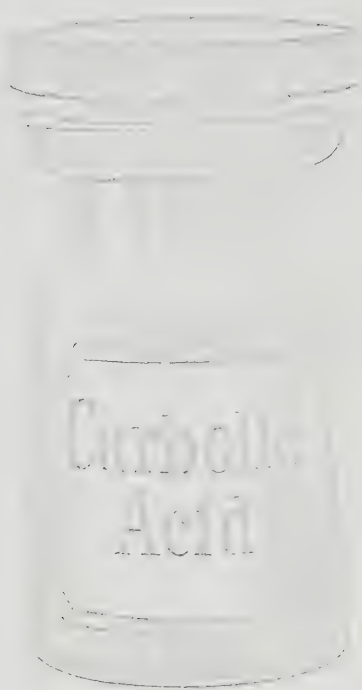
This Syringe is a strong and accurately made
British Article and will give you
splendid satisfaction.

In neat cardboard box - \$2.00

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Ash's Medicine Bottles

Made in England



A FINE assortment of these bottles all labelled, makes a good impression. The labels on these bottles are burned on and are therefore practically indestructible.

We carry a good assortment of these labelled for the most popular drugs, but we will have any labels burned to your order.

In neat cardboard box, Each 60 cents.

CLAUDIUS ASH, SONS & CO., Limited

Library 6 I

Volume 6

Number 3

NOVEMBER - 1916

Ash's
Canadian
Quarterly



*Issued from Toronto, May, August,
November, February.*

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Main Depot

London, W., England

Moaley Crown Remover

An Ideal Appliance for Removing
Crowns from Roots



THE Moaley Crown Remover was the first instrument devised for removing Dowel Crowns from the mouth. Its primary object is to remove these crowns without in any way injuring the roots. This is accomplished quickly and painlessly. In most cases the crowns remain uninjured and can be used again if desirable.

A slight turn to the right of Thumb Screw E removes the Crown, one Wedge Tongue pulling the Crown downwards, the remaining two supporting the root.

- | | |
|--------------------|----------------|
| A. Wedge Tongues 3 | D. Thumb Screw |
| B. Vice Jaw | E. Thumb Screw |
| C. Thumb Screw | F. Jam Nut |

Complete directions with each Remover

Price - - - \$5.50

CLAUDIUS ASH, SONS & CO., Limited

Authority.	Meningococcus.	Typhoid	Diphtheria.	Tubercle bacillus.
Sternburg (2).....		56°, 10 minutes..	58°, 10 minutes	70°, 10 minutes
McFarland (3).....		60°, 10 minutes..	58°, 10 minutes	60°, 20 minutes
Muir and Ritchie (4).....		60°, 30 minutes..	60°, 10 minutes	70°, 1 hour.
Park and Williams (5)	Readily.....		60°, 10 minutes	86°, 1 minute
Hiss and Zinsser (6)...	Extremely-en- (sitive to heat..)	56°, 10 minutes..	58°, 10 minutes	80°, 5 minutes
Jordan (7).....			55°, 45 minutes	60°, 20 minutes
.....		60°, 10 minutes..	58°, 10 minutes	80°, 5 minutes
.....		60°, 10 minutes..	58°, 10 minutes	65°, 15 minutes
Rosenau (9) (10).....		60°, 20 minutes..	less than typhoid	60°, 20 minutes

Table I. shows the thermal death point of various organisms, according to different authorities on bacteriology. It was found that the stock laboratory cultures of staphylococci were much less resistant than strains of the same organism obtained from human beings. For this purpose smears from cases of suspected diphtheria or from cases of tonsilitis were used, thereby getting organisms similar to those encountered in the mouth. Mixed cultures were used to simulate the conditions found in nature. In a few cases *Bacillus subtilis*, a non-pathogenic spore-forming organism, was encountered.

The resistance of the staphylococci was also tested, when dried on instruments prior to sterilization and when not dried. The resistance was always greater when the contaminated instruments were dry. Consequently the dried infectious material was used in most of the tests.

The physical processes involved in sterilization have been the subject of much research and discussion. It is not necessary to consider here to any extent the theories. They can be stated briefly as the coagulation and hydrolytic theories. The first strives to show that the cell substance of the organism is coagulated by the disinfecting agent, just as the white of an egg is coagulated by heat when cooked. The second theory claims that the death of the organism is brought about by the introduction of water into the cell substance, the consequent hydrolysis being accelerated by the disinfecting agent.

The process of sterilization has been described by Phelps (11) as an increase of the death-rate of organisms. But in determining the result of this process there are three factors to be considered, viz.: (a) The velocity of the death-rate of the organisms; (b) the time through which it is allowed to proceed; (c) the number of organisms present. The product of these three factors gives the result. Sterilization is, therefore, a relative result from a mathe-

cable to certain small instruments whose cost is not high, but is not available for general use.

MOIST HEAT IN AN OPEN OR CLOSED CHAMBER.

This is applied by the use of steam in an open chamber (Arnold), or in a tight chamber under pressure (autoclave). Its use for instruments is not very extensive, as the same results can be obtained by direct boiling and some time saved, since boiling a small amount of water requires much less time than heating-up a large apparatus. It is of greatest value for sterilizing linens, gowns, towels, etc., and the steam under pressure is preferable, on account of its greater penetration.

DRY HEAT IN A CLOSED CHAMBER.

This method is not used for instruments, on account of the high temperature required and the long time required to carry it out. It can be used for glassware or for sterilizing linen, if the temperature be not too high.

USE OF CARBOLIC ACID FOLLOWED BY ALCOHOL.

This method consists of submersion of the instruments in phenol of varying strength. The solubility of phenol in water is about one part in twenty, giving a five per cent. solution. This solution is more effective than the pure phenol. After submitting the instruments to this treatment they are immersed in alcohol, to remove the excess of phenol, and may then be rinsed in water, or used without rinsing.

Results of experiments.—With many strains, ten minutes' exposure to five per cent. phenol, followed by one minute in alcohol, sufficed to sterilize. Some strains of staphylococci, however, were more resistant, and uniformly gave growth after fifteen minutes; in a portion of the tubes even after thirty and forty-five minutes' exposure. No strain used survived one hour in five per cent. phenol. The same resistant strain was uniformly killed by boiling for three minutes. It was also killed by three minutes' exposure in an 80° water bath.

Its advantages are: (a) The cost is moderate; (b) it can be

result from the lessening of the density of formaldehyde vapor, unless special care be taken to replenish the supply of formalin solution at frequent intervals; (d) inability to remove a single instrument from the air-tight chamber without interfering decidedly with the process of sterilization, because of the lessening of the density of the formaldehyde vapor in the chamber; (e) the disagreeable odor and irritating effect on mucous membranes will be experienced more or less by both operator and patient.

OTHER CHEMICAL METHODS.

Disks containing mercuric iodide with some alkaline salt are theoretically practicable. The alkalinity is supposed to guard against the corrosive action of the mercury on the metal instruments. However, this brings a rather delicately balanced chemical reaction into use, and unless the application of the method be carried out by the dentist himself, or an assistant who has some knowledge of chemistry, bad results may be obtained. For instance, the chemical impurities of the water used may vary from day to day, and thus disturb the proper degree of alkalinity. No experiments were made with these disks, as it is not conceivable that their use is an improvement on some of the simpler and less technical methods.

The action of various chemical substances, such as gasoline, petroleum-ether, etc., was tried by the writer. Their efficiency is doubtful and uncertain. No sterilization was obtained except on prolonged exposure (twenty-four hours or more).

In addition to these methods the writer tried the application of moist heat at a constant degree, lower than the boiling point; 80° was the temperature used. This was tried in order to get a method that would interfere less with the edge of cutting instruments than does boiling; also, a method that could be applied to certain instruments that could not be boiled without marked deleterious effect on them, such as dental mirrors.

A jacketed water bath, designed by Mr. W. F. Wells, which was equipped with an apparatus for maintaining a constant level of water in the jacket, was used for this purpose. The inner chamber contains a thermo-regulator set at 80°. In this bath the contaminated instruments were placed for varying periods.

To alkalinize the water, 0.25 per cent. sodium hydroxide was

added. When once raised to 80° , the amount of gas or electric current required to maintain a bath containing one to two gallons is very small indeed. In fact, it can be maintained at that temperature for the whole twenty-four hours cheaper than it can be extinguished and reheated each day.

The use of this degree of heat had no deleterious effect on metal instruments or dental mirrors after prolonged and repeated exposure. Sterilization was always obtained in three minutes, even with the most resistant strains of staphylococci used. It is thus seen that this is practically as effective as boiling, but the temperature is 20° lower. It is simple to operate when once installed, and is very efficient and rapid.

As stated above, no bad effects were noted on dental mirrors or instruments. However, there was a bad effect on instruments with wooden or hard-rubber handles. In the present era, however, no instrument that is not entirely of metal has any place in the armamentarium of surgeons or dentists. There are a few exceptions to this rule, where flexibility or elasticity is a factor in the use of the instrument.

From the above experiments and considerations the methods depending upon moist heat were found to be by far the most rapid and efficient.

In order of merit the writer places the methods depending upon heat as the active disinfecting agent as follows:

1. Boiling for at least ten minutes in 0.25 per cent. sodium hydroxide.
2. Use of water bath at 80° for at least ten minutes.
3. Use of moist heat in free chamber (Arnold sterilizer) for at least ten minutes after thermometer reaches 100° .
4. Submersion in boiling water for at least ten minutes, the source of heat being removed immediately prior to submersion of the instrument.
5. Application of dry heat by passing instrument through a free flame.
6. Dry heat in closed chamber.

The arrangement of the chemical methods in order of merit is much more difficult; in none are simplicity, efficiency and rapidity combined as in some of the methods dependent on heat.

Using formaldehyde, the simplicity is ideal; but the length of exposure necessary to gain efficiency makes it undesirable. With phenol and other coal-tar products efficiency is good, but simplicity and rapidity are partially sacrificed. With mercuric iodide, the same factors that militate against phenol, plus a possible deleterious action on the instruments, are applicable.

It is the opinion of the writer, therefore, that in selecting a

constructed so that this could be removed and sterilized by heat. This is not applicable to engines which transmit the power from engine-head to handpiece by open cord belt.

The use of foot-levers for turning on the flow of hot and cold water in the wash-bowl is a great convenience to a busy operator who desires to keep his hands sterile. The use of a clean washable covering for the operating chair is a step in the direction of asepsis and cleanliness. The head-rest should have a clean linen cover, renewed for each patient.

There should be toilet facilities for patients, and, in addition to the usual lavatory equipment, a dental bowl, like that seen on Pullman cars, so that patient may brush his teeth without doing so over the wash-bowl.

To place the patient's mouth in as clean condition as possible, each patient should brush his teeth, preferably immediately prior to coming to the chair. This should be followed by a thorough rinsing of the mouth with some good mouth-wash. This procedure is a mechanical cleansing, aimed primarily at the removal of spores from the field of operation, though many other organisms are removed at the same time.

In order to do this the dentist should have a supply of tooth-brushes on hand and, if necessary, supply a new brush to each patient. This may be the patient's first encounter with the oral hygiene educational movement, but I believe it will be productive of good. I believe that the dentist should add the cost of the brush to the patient's bill, unless brushes can be obtained at so low a figure as to make their free distribution practicable. A supply of mouth-wash should be on hand in a convenient place for use by patients.

Paper drinking-cups and paper, or small individual, towels for patients should be furnished. The common drinking-cup and towel are abolished on all interstate carriers, and in hotels and public places in many States. It is, therefore, fitting that the members of the medical and dental profession should apply the spirit of these laws to their own establishments, even though the letter of the law does not require it.

Clean linen direct from the laundry is not sterile, but offers only the remotest chance for transmission of infection through it. Sterile linen is desirable, and, for a busy dentist, apparatus for its sterilization will be a great addition to office equipment. Steam

Chisels.	Root elevators.
Drills.	Rubber-dam clamps, and forceps for same.
Excavators.	Rubber-dam weights and metal parts of holder.
Explorers.	Saws.
Files.	Scalers.
Forceps, extracting.	Scissors.
Forceps, foil.	Scratch wheel on head of engine.
Handpieces for engine.	Spatulas, metal.
Impression trays.	Syringes, hypodermic.
Knives and lancets.	Syringes, water.
Mallets, hand and automatic.	Tongue-holding forceps.
Mixing slabs.	Mirrors (if 80° bath be used, but not to be boiled).
Mouth gags.	
Mouthpiece of saliva ejector.	
Pliers.	

3. That instruments in the above list whose mechanical construction makes it difficult to remove the excess of water are to be placed in 95 per cent. alcohol for ten minutes to remove water, then removed and allowed to dry.

4. That only instruments with metal handles be used by dentists desiring to follow this method.

5. That the following instruments be sterilized by immersion in five per cent. solution of phenol for at least sixty minutes:

- Mounted stones.
- Tortoise-shell instruments.
- Mirrors (when 80° bath is not used).
- Other instruments not of metallic nature and which cannot be replaced by metallic instruments.

6. That instruments, after using, be placed in a fluid medium, preferably clean water, to avoid drying of infectious material and to facilitate their mechanical cleansing.

7. That no instrument or appliance used on a patient directly or indirectly, be used on any other patient until recommendations 1 and 2, or 1 and 5, as the case may be, have been complied with.

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One Dental Engine, Foot Power, New;
One Lathe, New; One Hypodermic
Dental Syringe; Nine Forceps

All in good condition for \$35.00

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BONITH

A N excellent preparation to
recommend your patients for
cleansing Dentures. It is
a thoroughly reliable preparation.

Price - \$2.00 Dozen

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Ash's Zincup Cement—Continued

The copper compounds do not in any way affect the coloring pigments.

Ash's Zincup Cement is very tenacious;
 It is hydraulic—that is, it sets in the saliva;
 It is free from shrinkage, and seals the cavity as well as filling it;
 It mixes easily, and yields a beautiful smooth surface.

In cementing-in inlays it is important to use as thin a mix as possible, to prevent the possibility of the inlay being raised.

To cement the inlay, smear both the inlay and the cavity with the cement before inserting, to prevent blow-holes; press gently and firmly into place, and keep it under pressure until the cement begins to crystallise.

In cementing-in crowns, a thin mixture should also be used to prevent raised bites, and they should be kept under pressure until set.

Working Directions are enclosed in each packet.

Any shade Powder and Liquid	Small packet	\$1.25
“ “ “ “	Large “	2.50

Separately:

Powder or Liquid	Small bottle	\$0.65
“ “	Large “	1.25

Ash's C. A. S. Hydraulic Cement

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TO the the many excellent qualities of C. A. S. Cement have now been added hydraulic properties of the highest degree. The research necessary for this has also developed stickiness and smooth working qualities superior to any cement on the market at the present time.

The manipulation of C. A. S. Cement has thus been simplified to a degree that will give a perfect result in every case where the following

Directions are accurately followed

Place a few drops of liquid on a clear glass slab, near it place the necessary amount of powder, add the same to the liquid in small amounts and spatulate only enough each time to produce uniformity of mixture. Continue this procedure until the mix is thickly plastic and well past the thin creamy stage. Apply and allow to set for four or five minutes or until hard, before subjecting to moisture.

REMEMBER—Mix fairly thick and do not over spatulate.

Supplied in the following shades :

Pearl Gray, Light Yellow, White,
Grey, Yellow, Brown

Single Portion Package	-	-	-	\$1.50
6 " " "	-	-	-	7.50
Double " "	-	-	-	2.50
6 " " "	-	-	-	12.00

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PUSCURE

A box of PUSCURE costs you One Dollar and Fifty Cents; you can treat Two Hundred Putrescent Teeth or more at an average of Three Dollars each, Six Hundred Dollars in cash and the assurance that not one of these cases will return in trouble.

NO LOST TEETH
NO WORK TO DO OVER

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There are imitations of this rubber offered to the profession, some going even to the extreme of copying the name "Dark Elastic." Refuse these imitations, as if Ash & Son's name is not on the box and linen back the product is not ours.

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Price, per 5 pounds - 22.50

Direct or through your dealer.

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The Pioneer of all Impression Compositions
has now been before the Profession for

FIFTY-SEVEN YEARS

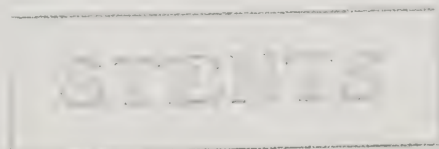
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**::: THE BEST :::
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for taking impressions of the mouth and
: : for many other useful purposes. : :

ATTTEMPTS have been made to imitate STENTS COMPOSITION; even to the color of the box in which it is packed, and the color of the label on the box, have been copied, for the purpose of deceiving the unwary; hence it is necessary to say that every cake of genuine, original STENTS COMPOSITION bears the Trade Mark, which consists of the outline of two Impression Trays, and the name



There is no other genuine, original STENTS COMPOSITION.

Stents Composition—Continued

TO BE OBTAINED OF
ALL DENTAL DEALERS

The label on every box bears this signature:



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The genuine, original STENTS COMPOSITION is prepared in round cakes, pink or yellow in colour, and supplied in half-pound boxes.

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THIS Gag has long been the premier article of its kind. It is strong and durable. Will retain itself in the mouth and the handles are out of the way of the operator.

In addition to being a perfect Gag, it is most useful as a mouth opener, as the beaks are so constructed that one falls below the other and they can be forced in between the upper and lower teeth.

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Hello!

Just Call
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using



JUSTI P. M. TEETH?

(PRECIOUS METAL)

"Oh! You *ARE* using them. So am I---and saving money by doing it.

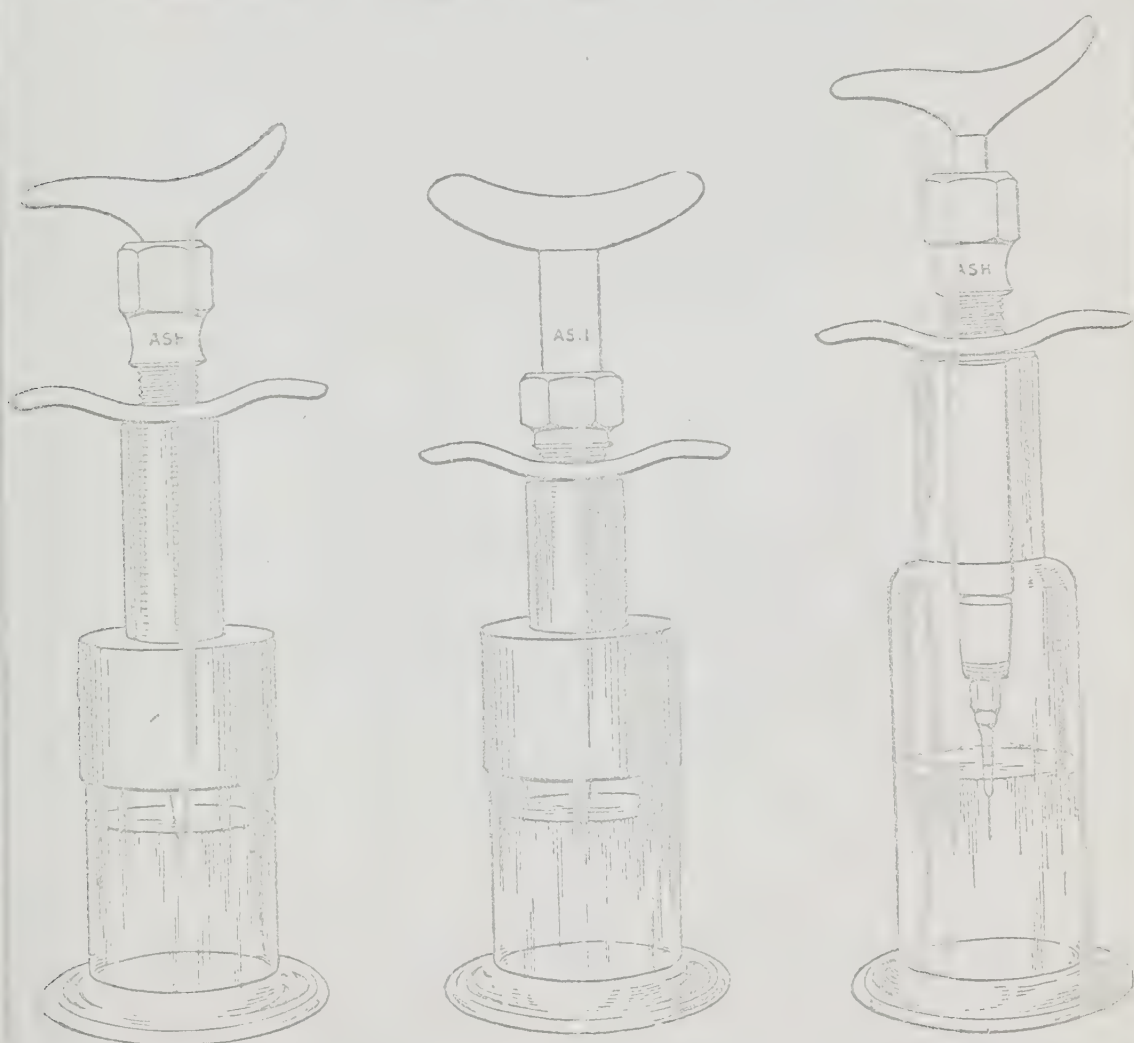
They are equal to Platinum Pin Teeth in every way---and are as good if not better than any kind of Teeth I ever used---not excepting the pure Platinum Pin Teeth which H. D. Justi & Son also make.

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NOTHING aggravates the dentist much more than to take up his Syringe after his last operation and find it *plugged*. He finds that he has laid it down after using it and it has quickly rusted. His time is too valuable to waste drying the needle out. All this annoyance is saved by the

Bardet Syringe Sterilizer



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CLAUDIUS ASH, SONS & CO., Limited

Volume 6

Number 3

MARCH - 1917

Ash's Canadian Quarterly



*Issued from Toronto, June, September,
December, March*

Claudius Ash, Sons & Co., Limited

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(Oxyphosphate of Zinc)

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To the many excellent qualities of C. A. S. Cement have now been added hydraulic properties of the highest degree. The research necessary for this has also developed stickiness and smooth working qualities superior to any cement on the market at the present time.

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REMEMBER—Mix fairly thick and do not over spatulate.

Supplied in the following shades :

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Double Portion Package	.	.	.	.	\$2.50
Six Color " "	.	:	.	.	12.00

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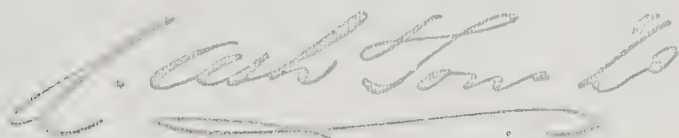
young." It follows from this that greater care and attention should be directed to the nutrition of the woman, and that the obstacles to which I have referred should be removed. Even more so is this the case for the expectant mother. For obvious reasons the life of the mother is more important than that of the child; it is more serious to lose a life in its prime. It is important that the mother should have sound teeth in order that the function of mastication should be exercised upon foods which will properly nourish the body and keep her in health, and that the anabolic condition may be maintained up to the birth of the child, so that she may be better able to sustain the shock of childbirth and have an abundant supply of milk to nourish her new-born babe. It is a popular idea that the nourishment of the mother is to be maintained for the purpose of nourishing the unborn; but, in fact, mothers who are ill-nourished—as most women, even of the richer class, are—bring forth normal healthy babies, Nature having provided that the unborn gets its nourishment at the mother's tissues. On this subject, Dr. Arch. Donald, of Manchester, says: "The term 'antenatal' is comparatively new, or has only been used freely within the last few years. It is an objectionable word compounded of an adverb and an adjective, and is often used by those who are fond of it in an ambiguous way. 'Antenatal treatment' means, I suppose, treatment of the unborn child, but antenatal treatment of the expectant mother means literally the care of the expectant mother before she is born. What is really meant is the care of the pregnant woman, but that is too vulgar an expression for use by officers of health. The unborn child can only be influenced through the mother. Anything which improves the mother's health will probably give the child a better chance, although it does not always happen that conditions which cause deterioration affect the child to any great extent. The fœtus is, generally, the last to suffer."

Nurses and doctors often believe themselves to be much wiser than Nature, and come between the mother and child and prevent by their skill Nature's food being given to the child, so that both mother and child continue to require medical skill. Lactation is a psychic act, and may be checked by suggestion. At this stage also the mother needs good teeth to keep her physical processes at their maximum. It is not by drinking stout, or milk, or taking tonics, that she will maintain a healthy digestion and regular action

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Unapproached for
Excellence, Purity, Strength,
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THE best results are obtained with Dental Rubbers when it is packed in very small pieces.

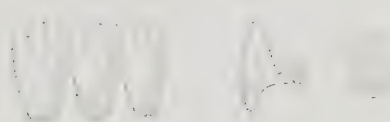
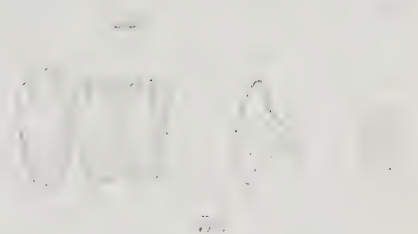
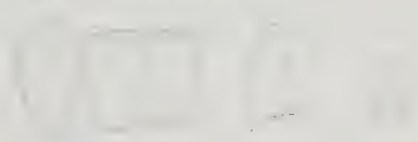
Extremes of temperature, especially cold, render it tough in time, and it is then not so easy to pack as new Rubber.

The toughness in no way effects the quality, and the packing is not difficult if the Flask is thoroughly warmed and the Rubber is softened on the Hot-water Plate—on no account should dry heat be used.

We guarantee full weight in every box or envelope of Rubber of our manufacture, exclusive of the tracing cloth in which it is packed.

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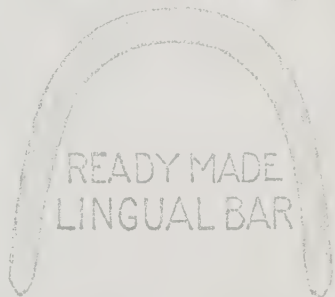
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At the time of its introduction Professor Miller in an exhaustive paper describing the experiments (Cor. Blatt., Apr., '94) said that the addition of tin in these proportions, viz., $2\frac{1}{2}$ to 3%, was clearly proved to have the effect of lessening the chemical dissolution of the copper in the fluids of the mouth. Further, that it favourably affected the colour of the fillings, which remained grey in contrast to the black of the copper amalgam without tin. Extensive experiments for detection of shrinkage were carried out, and we have evidence from Germany, where it has been largely used since 1893, to show that in actual practice the conclusions drawn from the experiments as to its value as a filling material have been confirmed.

Directions for Use.

Heat the Amalgam in a ladle until beads of mercury ooze out, crush it thoroughly in a mortar, knead well together in the hands, and use at once.

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